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In This Issue

Nurturing Innovation and Entrepreneurship among Students in Higher Education Information System: The Novel Educational/ODL Ecosystem

Moumita Das* and Suresh Garg**

Innovation and Entrepreneurship (I&E) play an important role in driving the economic growth of a country. As such, these corporate concepts are of recent origin. Innovation encapsulates everything that is new with respect of ideas/knowledge-original, novel, need-based, relevant – supported by research and leading to a product/process/service/strategy model for social good. Innovation in education implies that educator does what is best for the comprehensive development of students without bias or prejudices/they transact latest knowledge at their wavelength using newer techniques and trains them to ask probing questions, develop problem-solving skills and think independently. Innovation in education allows imagination to flourish.

Creation of economic values by taking risks imaginatively is referred to as entrepreneurship. It is also the process of designing, launching and running a new business innovatively. An entrepreneur possesses ability to translate invention or technology into products and services. An entrepreneur is an innovator and repository of new ideas with capacity and capability to take risks.

I&E activities improve productivity, develop core competencies and generate employment, thereby improving both the human resource and the economy of a country. Since India is the fifth highest and on the threshold of being the third largest economy, all her acts have to be innovative. Experience shows that the young entrepreneurs have the capacity and capability to take risks and pursue their dreams with innovative I&E activities. In fact, in developed economies, the youth have been traditionally encouraged and nurtured to take up innovative and entrepreneurial activities by their colleges and universities. The innovation capabilities like working fingers, communication, leadership, and strategic thinking are considered important part of business and entrepreneurship skills by corporate recruiters.

It is estimated that about five years from now India will have 1.04 billion young working-age persons, who will form a formidable global workforce[1]. They are envisioned to be providing their services globally as the rapidly aging population in other countries will grow with time. In this scenario, India will continue to enjoy competitive edge in terms of the demographic dividend in the coming decades.

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The GER in the higher education system in India was 26.7% with nearly 41.3 million students during 2020-21 (AISHE, 2021[2]), which grew to 43.2 million in 2023-24. This number is bound to grow in the following years. This valuable human resource holds the inherent capability to contribute to the development of not only India, but also the world, if nurtured in the right direction. Core competencies pertaining to the 21st-century requirements, such as communication, collaboration, creativity, and critical thinking, in addition to other knowledge and skills, need to be developed in the students, after which they will not only exhibit the capability of obtaining gainful employment but will also develop into employment providers. Students who become employment providers would need to be equipped with problem-solving skills, entrepreneurial skills, and leadership skills, to name a few, so that they can establish their enterprises or startups and provide jobs to others. In this scenario, the role of higher educational institutions in instilling these competencies in young students assumes much significance. On December 11, 2023, the Prime Minister of India, Shri Narendra Modi, while launching the vision of Viksit Bharat 2047, emphasized that "the role of educational institutions is to develop the person, and only through the development of the person, the nation is built." Urging the higher educational institutions to nurture innovations among the youth for contributing towards a developed India, he highlighted "Every youth who comes to your institutions comes with some characteristics. His ideas, no matter how diverse they are, have to be linked to the stream of building a developed India. I would like all of you to think beyond your limits to contribute to the vision of Viksit Bharat@2047"[3].

National Ecosystem for Nurturing Innovation by Higher Education Institutes

The importance of nurturing the spirit of innovation in higher education institutions has been the highlight of the National Education Policy (NEP) -2020[4], wherein it says "*Higher education must form the basis for knowledge creation and innovation thereby contributing to a growing national economy*". It has outlined a blueprint for nurturing an ecosystem of innovation in higher education institutes by creating a provision for "*start-up incubation centers; technology development centres; centres in frontier areas of research; greater industry-academic linkages; and interdisciplinary research*

including humanities and social sciences research." Emphasizing the importance of investment in research and innovation, the NEP has noted that as compared to the investment of 4.3% of the 522 billion GDP in Israel, and 2.8% of the 25.6 trillion GDP of the USA, India has an investment of only 0.69% of 3.4 trillion GDP. This obviously has to grow to be in the front row of advanced nations.

The Ministry of Education, Government of India has been creating an ecosystem of I&E in the higher education institutes in the country through its Innovation Cell (MIC) since 2018[5]. It aims to create and strengthen a culture of innovation among the students as well as the teachers of the universities and colleges. Towards this end, the MIC has launched programmes such as the establishment of the Institution's Innovation Councils (IIC) in universities and colleges, Smart India Hackathon, National Innovation Competition, National Repository for Innovations (YUKTI), Mentor-Mentee Scheme, Innovation Ambassadors, and Atal Ranking of Institutions for Innovation Achievements (ARIIA). The MIC has also motivated higher education institutes to put an innovation and startup policy in place. For this a guiding framework named the National Innovation and Startup Policy[6] has been provided to each institute for adaptation. The framework highlights the practical aspects of nurturing innovation, technology commercialization, and protection of intellectual property, among others. Some of the main aspects are:

Strategies for Promoting Innovation and Entrepreneurship

Creating pathways for innovators and entrepreneurs; building organizational capacities, human resources, and incentives; and collaboration and co-creation among ecosystem enablers.

Faculty and Student-driven Startups

Incentivizing the students and faculty for their entrepreneurship and startup pursuits.

Incubation Facility

Creation of incubators and pre-incubators in the institution.

Protection of Intellectual Property Rights

Systems to protect Intellectual Property Rights generated during technology development in every HE institution.

Pedagogy and Learning Interventions

Curriculum, Programmes and Courses with a focus on I&E.

Assessment of the Impact of Entrepreneurial Performance

Every HE institution should mandatorily carry out assessments on the outcome of its performance in the area of innovation and entrepreneurship.

Nurturing Innovation in the ODL system

The Open and Distance Learning (ODL) system in India has undertaken several initiatives towards nurturing innovations in students and teachers. The National Open University (IGNOU) and several State Open Universities (SOUs) have established dedicated innovation centres to incubate innovations and encourage entrepreneurship. IGNOU established the National Centre for Innovations in Distance Education Centre (NCIDE) in 2005 to promote innovations in the ODL system by providing intellectual, technological, and financial support to all concerned. Among the SOUs, the Uttarakhand Open University (UOU) established the Directorate of Research and Innovation in 2012[7], Dr. Babasaheb Ambedkar Open University (BAOU) established the Centre for Innovation, Startup, and Entrepreneurship in 2021[8], Karnataka State Open University (KSOU) set up the Centre for Innovation in 2022[9], Netaji Subhash Open University (NSOU) established the Innovation and Incubation Centre in 2023[10].

The NCIDE at IGNOU established the Institution's Innovation Council (IIC) in 2018[11] and has put the IGNOU Innovation and Startup Policy in place, the Tamil Nadu Open University (TNOU) and Odisha State Open University (OSOU) established Innovation Councils in 2019. Under the aegis of the IIC, IGNOU several activities aimed at promoting innovation and entrepreneurships among the students are being carried out. The students, who are being trained in I&E activities are enrolled in different academic programmes of IGNOU, have a diverse demographic profile, and reside in different geographical regions of India. The students are selected on the basis of their keen interest in innovation and entrepreneurship. The activities of the IIC are carried out throughout the academic year in which the students undergo training and conduct hands-on activities. In the training programmes, awareness is generated among them about various concepts of I&E. These are progressively divided from the ideation stage to proof of concept development through the prototype stage and finally to the startup formation stage. The concepts are taught in each of the four stages:

First Stage

The first stage pertains to the initial process of idea generation or ideation. In this stage, the activities include a lecture or discussion on the topics that help in identification of the problem and generation of the idea to solve the problem. In this stage, the topics taught are "entrepreneurship as a career opportunity", the methods of "problem-solving", and "ideation". Also, motivational talks by successful innovators or entrepreneurs are arranged to inspire the students to continue their journey of "idea to startup". Further, a field visit to a local area for problem identification is carried out. An Idea Competition is conducted to enable the students to compete among themselves to bring out the best. The best ideas are selected and awarded. Following these activities, mentoring support is provided to the students to refine the ideas generated by them to solve the problems.

Second Stage

The second stage pertains to developing a proof of concept (PoC) from the idea identified in the first stage. In this stage topics such as "Design Thinking", "Critical Thinking", "Entrepreneurship Skills, Attitude and Behavior Development", and "Achieving Problem-Solution fit" are taught. Further, field visits to nearby incubation centres/ fab labs are organized to provide exposure to students to enable them to develop their PoC further. An Innovation Competition or exhibition is organized to select and award the best innovation. Further, mentoring support is provided to develop the PoCs into prototypes.

Third Stage

The third stage is related to prototype development, where the PoC developed in the second stage is refined and modified into a prototype. In this stage, preparations are made for developing a business model/plan in parallel. In this stage, concepts, such as "Prototype Design and Development", "Legal and Ethical Steps for a Startup" and "IPR and IP Management" are taught. Developing a business plan requires research, and the research methods are taught to the students. A field visit is organized to a Patent Facilitation Unit or Technology Transfer Centre

to apprise the students about the activities of these centers to enable them to obtain further knowledge and information related to the development of their prototype. In this stage, the importance of developing a business model canvas or business plan is emphasized. A Business Plan Competition is organized to select and reward the best business plans. Further, mentoring support is provided to the students to validate their prototypes into working innovations and also to develop their business plans.

Fourth Stage

The fourth and final stage pertains to the setting up of an enterprise or a startup based on the innovative idea identified and developed in the previous stages. In this stage, awareness is generated regarding the startup and related ecosystem support services for startup development. The concepts taught in this stage include topics, such as "Prototype Validation", "Achieving Value Proposition Fit and Business Fit", "Lean Startup and Minimum Viable Product" and "Angel Investment/VC Funding Opportunities". A startup exhibition or contest is organized for the students to showcase their enterprises and pitch for funding. The best startup is selected and rewarded. Mentoring by the University continues in this stage as well to nurture the budding startups.

In all four stages, the relevant knowledge and skills are imparted through the blended approach using both online and offline methods. Expert lectures, motivational talks, virtual workshops, webinars, and discussions are often conducted in the online mode, whereas workshops, competitions, exhibitions, field visits etc., are conducted in the offline mode. In IGNOU, the activities in offline mode are mostly carried out by its Regional Centers.

As a result of such initiatives to nurture I&E, students have developed and reinforced their knowledge and skills of problem-solving, creativity, critical thinking, collaboration, leadership, and communication skills. The efforts have inspired hundreds of students from across India, including from the remote corners of the country, to ideate, develop prototypes and business plans, and win rewards and recognitions from various educational institutions. The ideas and innovations developed so far are in areas, such as waste management, edtech, natural farming, ornaments, gift items, recreation, tourism, naturopathy, food and beverage,

bio-medical devices, artificial intelligence, creation of bulletproof materials, development of electric vehicle, etc. Many students established their own enterprises in the past few years and presently more than a hundred motivated students, who are at various stages, are being incubated at NCIDE. Some of the students who have established their startups in different parts of India have also been providing employment opportunities to others.

The success of these endeavors can be gauged from the fact that some of these students have won national events, such as the first prize and Rs. One Lakh in Smart India Hackathon-2022[12] and a Financial Grant of Rs. 7 Lakhs[13], organized by the MIC. In addition, for nurturing an ecosystem of I&E in the University, IGNOU was recognized with a Five Star Rating by the MIC in 2020. In 2021, IGNOU was at the top in the category of Centrally Funded Institutions (non-Technical) in the ARIIA Rankings[14].

To conclude, we are of the considered view that Indian universities, through I&E initiatives, can develop competencies and provide a national platform to several students, who have the spark of innovation in them. With time, this number is bound to grow.

Endnotes

1. *https://www.ey.com/en_in/india-at-100/reaping-the-demographic-dividend*

2. *https://aishe.gov.in/aishe/viewDocument.action?documentId=352 , p 16.*

3. *https://innovateindia.mygov.in/viksitbharat2047/*

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13. *https://sites.google.com/ignou.ac.in/ignouudyami/stories-of-startupsignou/oncosense-solving-the-cancer-problem-using-nanotechnology*

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Vocational Education and Training: The Experiential Role of Netaji Subhas Open University, West Bengal

Anirban Ghosh*

Skills and knowledge are the driving forces of economic growth and social development for any country. The skill development initiatives help in employment generation, economic growth and social development. With the country becoming more specialized and with the increasing demand for better levels of specific skills, vocational training has gained significance. Vocational education in India aims to develop skilled manpower through diversified courses to meet the requirements of the ever-changing job market. Open and distance learning may be a solution to bridge the gap between demand and supply of skilled labor force (number of persons who are working and willing to work) in India.

National Education Policy 2020 of India marks a pivotal step, prioritizing the integration of technology and vocationalization in the curriculum across all levels. The focus extends beyond basic understanding to nurturing computational thinking, and problem-solving skills among the students. The NEP targets to develop a more skilled and job-ready workforce, which, in turn, will contribute to reducing unemployment and fostering economic growth. Education helps an individual to achieve self-actualization and it is only the proper education that makes a person better equipped in raising one's capability to contribute towards self and the overall social and national development. Through proper education and training, one would lead to better efficiency, productivity, and performance. No doubt, skills, and knowledge are the driving force of economic growth and social development for any country. Potentially the target group for skill development comprises all those in the workforce, including those entering into the job market for the first time, and also those employed in both the organized and unorganized sectors. One of the greatest advantages for the Indian economy is the sustained growth of the labour force population (15-59 years). We have to convert the huge young population into a demographic dividend. If India does not create enough jobs and its workforce is not

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adequately prepared for those jobs, its demographic dividend may turn into a liability that will adversely impact the economy of the country. Vocational education in India aims to develop skilled manpower through diversified courses to meet the requirements of mainly the unorganized sector and to instill self-employment skills.

Vocational education consists basically of practical courses through which one gains skills and experience directly linked to a job role. It helps students to be skilled and in turn, offers better employment opportunities. The appropriate skill development efforts would provide an opportunity to achieve inclusion and productivity within the country at the same time the skill development initiatives help in employment generation, economic growth and social development. Skills mean employability and mobility. So, a skilled person will have greater opportunities in the job market as well as his /her vertical or horizontal mobility will be easier. On the other hand, social development depends on industrial development and industrial development depends on the skilled workforce. Only the skilled workforce can increase the level of productivity as well as increase the quality of the product and services which in turn, helps in the livelihood of the people.

The average age of India's population is estimated to be 29 years. It gives an edge over the other nations so far as the young population is concerned. It was also estimated that by 2022, India will have the maximum number of working-age population in the world (population between the ages 15 to 59 years) who could contribute to the economic growth of the nation. The working-age population of any country plays a pivotal role in the economic development of that country. So, the huge young working population needs to be well-trained and skilled for their effective and meaningful contribution to social development. Vocational education and training in India aims to develop skilled manpower through diversified courses to meet the requirements of mainly the unorganized sector and to instill self-employment skills. At present skill base of the Indian economy is quite low as compared to other developed economies

of the world may be due to various reasons viz. lack of infrastructure of the training providers, lack of industry-linked training modules/ syllabus, etc. As a result, a large number of youths enter the job market without vocational training which in turn implies low productivity. Another alarming issue is that of the graduates who are coming out from the college education system each year almost half of them are not employable or do not possess the basic skills necessary for any industry. So, we have to enhance the skill development infrastructure in such a way that all the persons who join the workforce should acquire skills before entering into the job market. But in the short run, it will not be possible to develop adequate infrastructure to impart skill development programmes.

Present Situation

The increase in the estimated total employment in the nine selected sectors was noticed as per the report of the Directorate General of Employment, GoI (2021). According to the report, of the total employment estimated in the selected sectors, manufacturing accounted for nearly 39% (49% of the manufacturing sector belongs to the automotive sector), followed by education with 22% and health as well as IT/BPOs sectors both around 10%. Trade and Transport sectors engaged 5.3% and 4.6% of the total workers respectively. The other important sectors viz. accommodation and restaurants, and other financial services generate significant job opportunities. It is evident from the report that there is a tremendous opportunity in the service sector in terms of employment generation. If we consider the unorganized sector in India, we find that over 95 percent of the employed workforce is working in this sector. The unorganized sector is much more labor-intensive than that of organized sector. The unorganized sector is not just the hub for employment creation but also manual skills. Out of the employed persons in the unorganized sector, only 10-12% are skilled. Recognition of prior learning (RPL) is another ambitious initiative and is expected to contribute significantly to the existing workforce, especially in the unorganized sector for their improved productivity and skills.

The other serious problem in India is the problem of dropouts. Statistics show that the Gross Enrolment Ratio (GER) for elementary education (Class I-VIII)- 100%, in secondary education (class IX-X)-79.6%, higher secondary education (class XI-XII)-57.6%, and in higher education the GER is 27.3% as per the Annual Report, 2022-23, MoE, GoI. This means a large number of students are not continuing their studies at the secondary level as well in the higher secondary level. The GER in higher education is also not encouraging. Whatever the reason, the fact is that a large number of the population is not contributing to the economy as they are not properly educated and trained. Only the trained resource pool may contribute effectively to the economic development of the country. There are significant opportunities to develop a skilled workforce and an enormous scope of employment in un-organized sector for unskilled workers.

A huge number of students remain outside formal education due to varied socio-economic reasons. What will they do? How they will maintain their livelihood? But it is our (educators/ education providers) responsibility to bring the dropouts into the education system to train them for their livelihood and to keep them in economic activities so that they can also contribute to the development of the country. However, formal/ regular education system can't accommodate these people due to infrastructural limitations and the rigidity of the system. Hence the open and distance learning system can play an important role in providing the skill development programme and contribute to the capacity building of the existing work force as well as for the fresh graduates awaiting to enter into the job market. The necessary change in imparting vocational training should be made for the dropouts of students after Class VIII, X and XII to keep them involved in social development.

Meeting the Challenges

The enormous gap between the demand and supply of skilled workforce cannot be minimized

Figure 1: Channel of Vocational Training
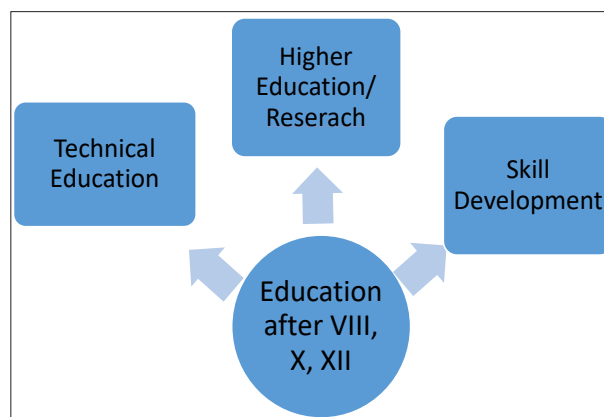
only by depending on the conventional system of education which has a fixed intake and also the number of institutions are limited to cater to the demand of large number of skilled workforce. The present scarcity of skilled labour can be addressed by an open and distance learning system (ODL). The ODL system because of its inbuilt learner-friendly feature and flexibility, has the potential to enable the learners to deal with the challenging task of acquiring skills. Through ODL methodology and with the help of Information and Communication Technology (ICT), virtual laboratory, and virtual workshops, a large number of persons can be trained with a specific skill.

Over 95 percent of employment in India is in the 'informal' sector, with employees working in relatively low-productivity jobs. The provision of appropriate skills may thus be an important intervention to increase the productivity of this workforce. This problem cannot be addressed by the formal system of education. So, the open and distance learning system has the opportunity to serve society by including dropouts, untrained working groups, and fresh graduates to make them employable as well as to remain relevant in the ever-changing job market in the 21st century. The existing workforce can also take advantage of re-training or upgrading their skills without leaving their present job through the ODL. Public Private Partnership (PPP) may be explored to impart short-term vocational training programmes. With proper planning, the employability of the rural youth can be enhanced with region-specific demand and modular-based vocational training through ODL. This will expand self-employment opportunities as well as the migration from rural areas to urban areas can be minimized by providing proper vocational training. The government of India is also giving due importance by taking various skill development programme under the "Skill India" project. The technology-enabled vocational education and training (TVET) may be another solution for bridging the skill gap in the workforce.

Role of Netaji Subhas Open University as an ODL Institution

The Netaji Subhas Open University was established to spread higher education in different parts of the state of West Bengal to provide access to higher education and different skill-enhancing educational opportunities. It aims to:

- provide quality education in a flexible mode to serve the aim of establishing an equitable knowledge society,

- make education affordable to the disadvantaged,

- provide facility for life-long learning,

- strive for upgradation of technology without compromising the basic values of the society, and

- contribute to the development of the state and the nation.

Established in 1997 by an Act of the West Bengal State Legislature, Netaji Subhas Open University (NSOU) has now emerged as a major leader in the Open and Distance Learning system not only because of its high enrolment rate but also of the diversity of its highly innovative and pioneering quality educational programs. The NSOU has been striving uninterruptedly by providing educational opportunities to learners particularly to the backward and weaker sections of society, promoting wider access to higher education, providing different skill-enhancing programs, providing quality education at the doorsteps of the common people, and promoting equal opportunities for higher education.

The University started its journey with the offering of degree courses like BA and B.Com in 1998. Subsequently, the University felt the necessity for vocational training to minimize the gap in the demand and supply of skilled workforce. In India especially in West Bengal, there is a huge shortage of skilled manpower in various sectors as well as tremendous pressure of migration from the rural to urban area for employment. This is the area where distance education can be used extensively to provide education that can develop a skilled workforce for society. The University shows an alternative route to learning for the students who leave school after Class VIII or X/ XII on different grounds, which suits their interests and develops their earning capability. The vocational courses of the University have flexibility in the duration of training, appropriate to the expected levels of competencies and skill proficiency, which leads to either self-employment or wage employment.

The University provides vocational and innovative courses so that the learners can engage themselves in income-generating livelihood. The formal education system alone can't provide the desired number of skilled workers as discussed

earlier. In such a situation, Netaji Subhas Open University is allowing upgrading the skills of the existing workforce by providing seamless vocational education training through its 52 vocational study centres all over the State of West Bengal. Presently, there are 700+ learners on the roll in 21 courses under the School of Vocational Studies. The University always tries to enhance the skills of rural people. Out of 52 vocational centres, 35 centres are located in rural and remote areas and the other 17 centers are located in the urban areas of the State. The rural centres help upgrade the skill and efficiency of the rural youth thereby reducing the migration from rural to urban areas.

If we see the NSOU's students' enrolment in terms of girls, SC, and ST categories, we find that NSOU's contribution is very significant as the participation of SC and ST in the NSOU's general degree courses are 22.57% and 3.64% respectively which is higher than that of the conventional system of education. The conventional universities in West Bengal do not have any skill development programme where as NSOU provides a skill development programme through its wide network of 52 vocational centers which serves a greater opportunity to disadvantaged people. The statistics also prove that in the case of vocational courses, the participation of SC and ST students in total enrolment is 19.42% and 3.97% respectively. The girls' participation in skill development programmes of the University is very encouraging is 52.12%.

Table 1: Student Composition in Higher Education in West Bengal

Higher Education Institution in WB	Girls	SC	ST
Conventional Universities	43%	18.45%	3.05%
NSOU General Degree course	36..12%	22.57%	3.64%
Vocational course	52.12%	19.42%	3.97%

Source: Compiled-Annual Report, Department of HE, Govt. of WB & NSOU (2021-22)

So, it may be inferred that the objective of establishing NSOU in the State is being achieved as more and more girls students including the disadvantaged sections like SC/ST are being educated/ skilled through ODL. Therefore, the Open University system (NSOU) is giving the opportunity of vocational education besides the higher education

to the marginalized people and has increased the access to the disadvantaged groups like girls and SC/ST students in a significant manner.

The students belonging to the special categories have been attracted to the vocational courses because of the nature and delivery method of the courses. They need not travel much from their home to the centres and workshop. They are getting the opportunity of learning without disturbing their regular assignment/ commitment. All the courses of NSOU are tailor made and need based which meet the needs of the present society. The courses are designed to include mostly practical components and hands-on training. As a result, after completion of a particular trade or subject, the successful student will be able to become an entrepreneur or enter into the job marker as a skilled worker. Some of the vocational courses that are presently offered by the University are as follows:

Table 2 : Some Important Vocational Courses of NSOU

Tailoring & Dress Designing	Needlework & Knitting
Safety and Security Management	3D-Animation
Pre-Primary Teachers' Training	Psychological Counselling
Entrepreneurship and Small Business Management	Hospital Front Office Management
Travel & Tourism	Export-Import Management
Modern Office Management	Website designing and development
Taxation-GST	DTP & Networking
Yoga education	Digital Media and Marketing
Graphic design	Video editing
Organic Agriculture	Automobile Technician

All these courses aim to increase employability, generate income and create new job opportunities. Above all, these vocational courses transform the students' lives by adding value at the end of the training. At present, the University is exploring the possibility of opening more vocational centres in remote areas of the State. The University gives due importance to women's empowerment by imparting different courses exclusively for girls/ women.

Figure 2 shows the enrolment status during the last five academic sessions. It is evident that during the pandemic period, the enrolment declined significantly in comparison to the academic session July 2019. Several efforts have been made to increase enrolment in vocational programmes e.g. opening new centres and introducing new skill development programme to meet the need of the job market. During the last couple of sessions, the university launched 5-6 new vocational courses like diploma courses in animation, website designing, and development, etc. was launched to meet the growing demand for a skilled workforce in the rapidly changing service sector and also to reach the rural areas, the university opened new study centres to reach the rural students.

Shaping Future Workforce in the State

The above figure also supports that NSOU being state open university is playing an important role in creating a trained resource pool for the society and giving them an opportunity for their livelihood. Table 1 exhibits that the University is successful in bringing the disadvantaged sections like girls, SC/ST under its skill development programme thereby serving the society for which it was established.

Training programmes in emerging areas like Healthcare, tourism, hospitality, IT-ITeS, transportation and logistics, banking, and financial services are being offered to supply the trained workforce in the respective specialized job market.

The success rate of such courses is also noticeable. As the courses are practical based and the students are engaged in hands-on training, the students enrolled in a particular subject or trade, appear in the term-end examination and complete it successfully. Though the objective of the University behind the vocational courses is to promote self-employment, the students can enter the specific job market for a suitable job to secure their future. The passed-out students of different courses are already well-placed in different companies/organizations and also started their own business as entrepreneurs.

Some Initiatives

To ensure the access, equity, and quality of the TVET, the university has adopted the following initiatives for the future job readiness of the ever-changing job market.

State-wise Skill Development Network

All the vocational programmes are conducted through a network of 52 learner support centres across the state of West Bengal.

Industry-Academia Partnership

Collaboration with industry led to industry-relevant skills for the youth. The synergy between academia and industry not only prepares students for real-world challenges but also ensures that academic research remains relevant and impactful.
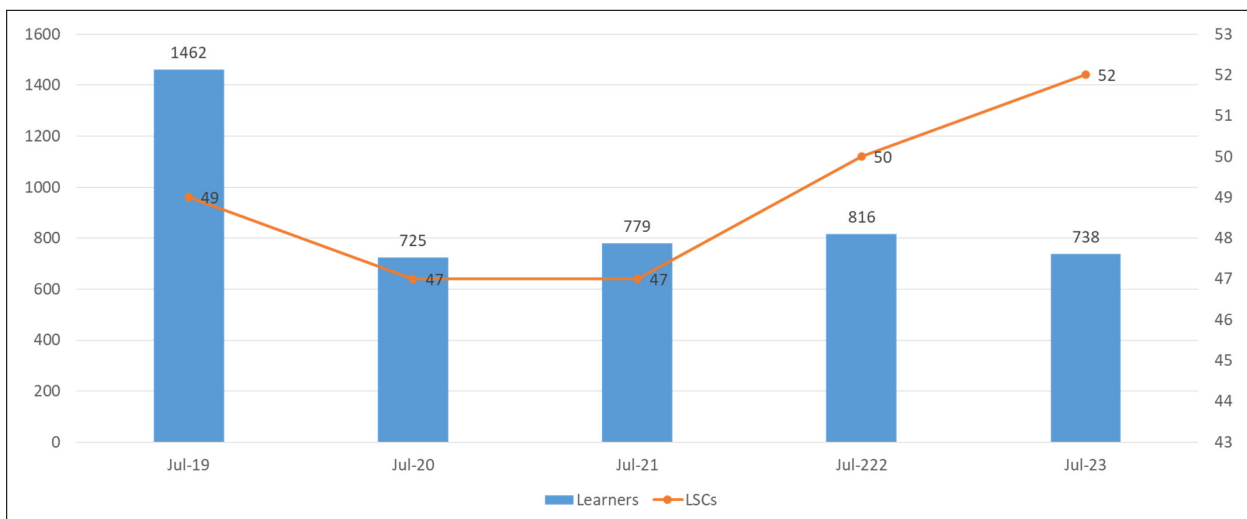
Training of Trainers

The School regularly organizes a training of trainers programme in various skills to maintain a certain level of training standard.

Orientation for Learners

The learners are regularly oriented and updated

Figure 2: Admission of Students in the Vocational Courses

with the latest and updated information relating to their course.

Technology Integration

Education technology has been integrated for delivery of the skill-based vocational programmes. The technology-enabled pedagogy has been well accepted by the learners which help them learn at their convenience. The practical and hands-on training are conducted at the LSCs. All the courses are supported by audio-video lectures which are made available through Web TV, Web Radio, LMS, etc.

Village Knowledge Centres

The Village Knowledge Centre is a place to render distant services from a single window point to rural masses especially in remote areas of the state through modern Information and Communication Technology. The purpose of setting up of a VKC is to bring access to a range of services, content and information to people living in remote villages or areas which do not provide such access otherwise.

Micro-Credential Courses

The skill-based micro-credential courses are very effective for the existing workforce to remain relevant in the ever-changing nature of the job market. If the micro-credential courses are designed and offered as per the needs of the industry, the contribution of the workforce may be changed significantly. The micro-credential courses are offered in modular concept and the duration may vary from 3 months to 12 months. For each micro-credential course 'badge' will be provided for attaining a certain level of competency. Two/ three badges may lead to a diploma course. This type of course helps the existing workforce to gain knowledge in the contemporary domain and at the same time promotes lifelong learning. The University has a good number of MOOCs that can be planned to be offered as micro-credential courses for the benefit of such people.

Quality Perspectives

The university always believes in sustainable development through vocational education and training. During 2018-19 to 2020-21, the Commonwealth Educational Media Centre for Asia (CEMCA) supported the university to increase access and improve institutional capacity for delivering vocational training. Under this project, the university undertook various initiatives like capacity building of academic counselors, revision and updation of curriculum, development of print and non-print course materials, training of trainers, development of the mobile app, up-gradation of OER repository, organizing job fair, etc. Before the commencement of each session, the university organizes orientation programmes for trainers and induction programme for the learners/ trainees

Conclusion

The University offers these courses through partnerships with other organizations under the Public-Private Partnership (PPP) model. The University utilizes the existing infrastructural facilities of these organizations located across the state. Actually, these organizations widen access to University's programme, through their available resources for promoting vocational training through distance education. The essential feature of NSOU's plan is an emphasis on defining its programme initiatives in terms of the results to be achieved. This result-based management approach guides planning and implementation at all stages of a programme cycle. Apart from the electronic medium, different channels like a network of study centres and NGOs are used for vocational capacity building which in turn helps in social development. With proper planning, the employability of rural youth can be enhanced with region-specific demand and modular-based vocational training. The migration from rural areas to urban areas can also be minimized by providing proper vocational training through ODL.

So, to address the huge demand-supply mismatch in the job market in the country, the open and distance learning system acts as an important mode of education and training and can address the challenge of demand-supply mismatch to a large extent.

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Status of School Infrastructure and Mid-day Meal Scheme in Dehradun

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Nelson Mandela once said that education is a powerful tool for changing the world. Education plays a crucial role in preserving, enriching, and refining intellectual systems. Education is used to improve the standard of living, prosperity, and well-being of a nation's people, it becomes an effective instrument for rapid development.

Introduction

The Mid-day Meal Scheme (MDMS) was introduced in 1995 to enhance enrolment, retention, and participation of children in primary schools while simultaneously improving their nutritional well-being. In September 2004, the MDMS underwent revisions and was made available to all children, with the central government providing financial assistance to Re. 1.00 per child per school day to convert food grains into hot cooked meals. This program was extended to children in classes I-V attending government, local body, government-aided schools, EGS, and AIE centres. During the summer vacation, nutritional support was also provided to students in drought-affected areas. The maximum allowable transport subsidy was revised to Rs. One hundred per quintal for Special Category States and Rs. Seventy-five per quintal for other states. An allocation of Rs. 5900 crore was earmarked for the Mid-Day Meal Scheme in the Tenth Plan.

National Program of Nutritional Support to Primary Education (NP-NSPE)

The implementation of the Supreme Court's directive, scheduled for June 2002, faced violations by several states who cited insufficient funds as the reason. During that time, there was a Centrally Sponsored Scheme launched on August 15, 1995, initially covering 2408 blocks across the country. This scheme gradually extended to include all blocks nationwide by 1995-97, and in 2002, it was further expanded to encompass children studying in classes I-V across a wider range of schools. Under this scheme, the responsibility of covering cooking

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costs rested with the respective state governments and union territory administrations. However, due to financial constraints, many state governments and union territory administrations resorted to distributing raw food grains instead of providing cooked mid-day meals.

Government Primary and Upper Primary Schools in Uttarakhand and Dehradun

Table 1: Government Primary and Upper Primary School of Uttarakhand, 2016-17

	Primary Only	Primary with Upper Primary	Upper Primary Only
Government Schools	12,595	17	2800
Government Schools: Rural	12,197	11	2,705
Enrolment in Government Schools	4,23,193	1,161	1,10,245
Enrolment in Government Schools: Rural	3,86,618	582	104,081
Teachers in Government Schools	27.700	83	9,011

Source: UDISE, Elementary Education Report Card:2016-2017

Table 1 shows data on government schools in terms of the number of schools, enrolment, and teachers, categorized by school type and location. For Primary-only government schools, there are 12,595 schools with an enrolment of 4,23,193 students and 27,700 teachers. For Primary with Upper Primary government schools, there are seventeen schools with an enrolment of 1,161 students and eighty-three teachers. For Upper Primary only government schools, there are 2,800 schools with 1,10,245 enrolments and 9,011 teachers. Looking at rural government schools, there are 12,197 Primary-only schools with an enrolment of 3,86,618 students and 27,700 teachers. For Primary with Upper Primary rural government schools, there are 11 schools with an enrolment of 582 students and 83 teachers. Finally, there are 2,705

Upper Primary only rural government schools with an enrolment of 1,04,081 students and 9,011 teachers.

Table 2: Number of Government Schools in Each Block of Dehradun (2022)

Block	No. of Schools
Chakarta	302
Doiwala	222
Kalsi	274
Raipur	255
Sahaspur	205
Vikasnagar	171
Total	**1429**

Source: Department of School Education, Govt. of Uttarakhand

Table 2 shows that there are a total of 1,429 schools across all blocks in Dehradun district. The highest number of schools is in Chakarta block, which has 302 schools. Following Chakarta, Doiwala has the second-highest number of schools with 222. Kalsi has 274 schools, Raipur has 255 schools, Sahaspur has 205 schools, and Vikasnagar has 171 schools

Review of Literature

Daru (2015) emphasizes the significance of education and health sectors in the development of high-quality human capital. The formation of human capital plays a vital role in increasing productivity and production. The technical skills required for enhanced productivity and quality production can only be acquired through education and maintaining good health. Access to health facilities and nutritious food enables individuals to lead healthy and prolonged lives. A healthy individual contributes more productively to the nation compared to an unhealthy individual. Sharma (2015) highlights the profound impact of malnutrition on child mortality. Malnutrition results in long-term deficiencies in mental, physical, social, and emotional development, hindering children's ability to benefit from learning opportunities in school. In order to improve nutritional levels among children and promote school attendance, the Indian Supreme Court mandated the implementation of the school feeding program, also known as the mid-day meal scheme, in 2001. This scheme has effectively addressed classroom hunger and increased enrolment rates in beneficiary schools. Its contribution to food security and child nutrition is particularly crucial in tribal areas plagued by endemic hunger. Maheswari (2015) conducted a study titled "Mid-day Meal Programme Implementation in Mirshik Seetapur" to assess the program's performance in the village and identify constraints and challenges in its implementation. The study revealed that the mid-day meal program had successfully increased enrolment in the sample centres and reduced the primary level dropout rate to less than 10 percent. However, discussions with teachers and the managing committee revealed that many parents were reluctant to allow their children, especially girls, to consume meals at school. Dissatisfaction with the program's functioning was expressed by most parents, with only a few expressing satisfactions with the food quality. Students did not receive cooked meals regularly and were sometimes provided with dry ration due to difficulties in arranging cooks and ensuring sufficient food quality within the allocated budget. Teachers also argued that the mid-day meal scheme disrupted their teaching schedules. Kaur (2021) conducted a study on the impact of the Mid-Day Meal Scheme on school enrolment in India. While the program was implemented nationwide, its execution varied across states. The findings of the study suggest that the mid-day meal scheme increased the probability of primary school enrolment and on-time enrolment in first grade. The analysis also revealed that socially disadvantaged groups and girls benefited more from the program. Specifically, the impact of the mid-day meal program on girls' enrolment was almost twice that on boys, indicating its positive contribution to reducing the gender gap in school participation. Sripathi, et. al. (2022) conducted a study evaluating the challenges associated with the implementation of the MDM Scheme in two blocks of the Rayagada district in Odisha, India. Rayagada district is characterized by high malnutrition rates among children and resource constraints. The study identified critical implementation issues, including delivery delays, low-quality food, inadequate water facilities, and unhygienic cooking and serving practices. The findings of the study have important implications for effectively implementing the program in similar contexts. Singh's (2021) study focused on assessing the impact of the mid-day meal scheme in primary schools of Jharkhand, aiming to address the nutritional and educational needs of the students. The study concluded that while the scheme had a positive effect on student attendance and enrolment, the nutritional value of the meals provided was insufficient. In a recent study by Roy, et. al. (2023), the issue of malnutrition in India was examined, specifically looking at the impact of the

midday meal (MDM) scheme in primary schools across different states. The authors conducted the statistical analysis using exploratory data analysis techniques and analysed parameters such as anemia, stunt-growth, and enrolment of children. The findings revealed patterns between these parameters and the performance of children participating in the MDM scheme, highlighting the importance of continued implementation of the program for the improvement of children's health and education. Another study by Jayalakshmi et al. (2017) focused on assessing the efficiency of the MDM program in ensuring the nutritional well-being of 6-10-year-old schoolchildren in Kottayam district, Kerala. The study found a higher prevalence of undernutrition among children benefiting from the MDM program, indicating the need for ongoing nutritional interventions and monitoring for these children. Arya and Mehta (2020) conducted a study in Varanasi district, focusing on the nutritional status of 320 students from government primary schools. The study revealed a significant prevalence of wasting and stunting among the students, indicating the need for improved nutritional support. The height of boys was found to be shorter compared to WHO standards across all age groups, with the largest difference observed in the 13-year-old age group. Additionally, girls' height was also found to be shorter than the WHO standards. These studies collectively highlight the importance of the midday meal scheme in addressing both the nutritional and educational needs of school children. Due to food poisoning the violation of the right to life of the children takes place. While the program has shown positive effects in terms of enrolment and attendance, there is a need for continuous efforts to improve the nutritional value of the meals provided and monitor the well-being of the children benefiting from the scheme (Arya and Mehta, 2018).

Manan, et. al. (2022) emphasized the negative impact of hunger and malnutrition on children's learning abilities. They highlighted the significance of midday meals in alleviating "classroom hunger" and improving concentration among students. The program also received widespread support from rural educators and community leaders. Arya and Mehta (2019) conducted a study focusing on the government primary schools in Varanasi, aiming to uncover the prevalent practices of social discrimination that adversely affect children's learning, growth, and confidence. The researchers utilized a multistage sampling method and selected five children from each school, spanning from 1st to 5th standards, as a sample. Primary data was collected through interviews, with twenty-five children from both boys' and girls' categories. Arya and Mehta (2019) analysed the collected data revealed varying opinions among the children regarding gender and caste-based discrimination during the implementation of the Mid-Day Meal Program. Disturbingly, a significant number of cases emerged related to caste discrimination against children. Based on these findings, they have concluded that such discriminatory practices violate the children's right to life. They emphasized the importance of taking precautionary measures to prevent food poisoning cases, which contravene Article 21 of the Constitution of India and Article 3 of the Universal Declaration of Human Rights (UDHR). In a separate study, Arya and Mehta (2021) examined the wide-ranging impact of the COVID-19 pandemic on various sectors, particularly the education sector in India and worldwide. The temporary closure of educational institutions to curb the spread of the virus has disrupted the education of around 320 million learners in India alone, resulting in a pause in all educational activities. Several studies have focused on the causes that hindered the 100% success of MDMP.

Although studies have shown the positive impact of the mid-day meal scheme on reducing the gender gap in school participation, there is a need to explore the effectiveness of the scheme in empowering girls and promoting gender equity. Despite the success of the mid-day meal scheme in increasing enrolment rates, there is a need to explore the impact of the scheme on the quality of education and learning outcomes of students. While the mid-day meal scheme is effective in addressing classroom hunger, there is a lack of research on the impact of the scheme on the health of students and the nutritional status of the population in the long run. Although several studies have examined the implementation challenges of the mid-day meal scheme, there is a need to explore the role of stakeholders such as teachers, parents, and policymakers in ensuring the effective implementation and sustainability of the scheme.

Objectives of the Study

1. To access the infrastructure status of the of Primary and Upper Primary Schools in the Dehradun district.
2. To analyse the conditions of Primary and Upper Primary Schools in Dehradun district.

3. To compare Schools Providing Mid-Day Meal and School Providing Mid-day Meal but Not Prepared in School Premises.

Research Methodology

As per objectives of the study, details of methodology which includes nature of data, tools and techniques used for data collection and procedure adopted for data analysis have been presented in this chapter.

Focus of The Study

The literature review revealed that many studies have examined the implementation of the mid-day meal scheme in rural areas of Uttarakhand. Although several surveys have been conducted, the focus has primarily been on the functioning of the mid-day meal scheme in rural areas. To gain insights into the organizational structure and address issues pertaining to the quality and quantity of the mid-day meal served, as well as the role of the parent-teacher association in an urban context, the researcher opted to conduct a study on the mid-day meal scheme in government primary schools located in Dehradun city. The researcher investigated various aspects, including the implementation process, organizational structure, quantity, and quality of the cooked food provided to students, the opinions of beneficiaries and program functionaries, and the regularity of the mid-day meal.

Nature of Data

To realize the objectives of the study, quantitative and qualitative data were required. The quantitative data was regarding the cooking cost of the food, calories of food provided, amount of food grains released, etc., qualitative data was regarding the implementation of the scheme at the school level, reactions or opinions of the functionaries and beneficiaries of the scheme, regularity of the Mid-Day Meal, were collected.

Sources of Data

The data was collected from government documents, school records, reports of various Commissions and Committees, guidelines of NP-PSPE-2006. Annual Work Plan and Budget (AWP & B) for Mid-Day Meal Program and Sarva Siksha Abhiyan for the last three years. Further, the secondary data was obtained from the beneficiaries of the scheme viz. students and parents of the students at Government primary schools of city for the Dehradun city present study. Data was also obtained from the functionaries of the scheme which included teachers in charge of MDM, members of MDM cell, and the supplier of the cooked food.

Findings, Conclusions and Suggestions

Objective 1: To Access the Infrastructure Status of the Primary and Upper Primary Schools in the Dehradun District

Table 3 This table shows the indicators of the infrastructure status of primary-only, primary with upper primary, and upper primary-only schools. The indicators are a school with playground, girls' toilet, boys' toilet, drinking water, School Management Committee (SMC), mid-day meal, and kitchen shed. The percentages for each indicator are shown in the corresponding columns for each type of school. Table 3 shows that schools in playgrounds are highest in the case of upper primary only schools which is 84.3 percent and lowest in primary schools which is 55.7 percent. schools with girls' toilets and schools with boys' toilets are highest in upper primary only schools which are 98.6 and 99.7 per cent. Schools with Drinking Water, Schools with SMC, Government Aided, School Provided Mid-Day Meals are highest for the primary school-only category of schools which are 96.3, 99.1, and 99.0, respectively.

The current management and monitoring aspects of the Mid-Day Meal scheme exhibit certain shortcomings, such as a lack of proper documentation, inconsistent data collection methods, and limited use of technology for monitoring purposes. To improve the management and monitoring, it is recommended to implement a robust data management system, establish clear protocols for data collection, invest in technology for real-time monitoring, and provide training to the staff responsible for managing the scheme.

Objective 2: To Analyse the Conditions of Primary and Upper Primary Schools in Dehradun District

Table 4 shows the condition of schools in Uttarakhand based on three categories: primary only schools, primary with upper primary schools, and upper primary only schools. The condition of the schools is further classified into three categories: good condition, need minor repair, and need major repair. The numbers in the table represent the percentage of schools in each category that fall under each condition. For example, in the primary only school's category, 65.53% of the schools are

Table 3: Infrastructure status of Primary and Upper Primary Schools in Dehradun 2016-2017 (in %).

Infrastructure Indicators	Primary Only	Primary with Upper Primary	Upper Primary only
Schools with Playground	55.7	76.1	84.3
Schools with Girls Toilet	96.7	64.3	98.6
Schools with Boys' Toilet	97.2	59.0	99.7
Schools with Drinking Water	96.3	55.9	79.0
Schools with SMC	99.1	69.2	64.6
Schools Provided Mid-Day Meal	99.0	79.1	64.6
Schools With Kitchen Shed	58.1	90.2	72.7

Source: UDISE, Elementary Education Report Card: 2016-2017

Table 4: Government Primary Only, Primary with Upper Primary and Upper Primary School Condition (2016-2017)

Uttarakhand School Condition	Primary Only	Primary With Upper Primary	Upper Primary Only
Good condition	65.53	97.31	66.10
Need minor Repair	15.25	2.39	17.09
Need major Repair	19.22	0.30	16.80
Average Number of Teachers Per School	2	5	3

Source: Elementary Education Report Card: 2016-2017.

in good condition, 15.25% need minor repair, and 19.22% need major repair. Similarly, in the primary with upper primary schools' category, 97.31% of schools are in good condition, 2.39% need minor repair, and only 0.30% need major repair. Lastly, in the upper primary only school's category, 66.10% of schools are in good condition, 17.09% need minor repair, and 16.80% need major repair. This table provides an overview of the condition of schools in Uttarakhand and highlights the need for maintenance and repair work in some schools

The feedback and opinions of the functionaries involved in implementing the Mid-Day Meal scheme provide valuable insights for its improvement. Key suggestions include the need for regular meetings and communication channels between functionaries and program administrators, the importance of incorporating their practical experiences into policy decisions, and the provision of training and capacity building programs to enhance their understanding of the scheme's objectives and implementation strategies.

Objective 3: To compare Schools Providing Mid-Day Meal and School Providing Mid-Day Meal but Not Prepared in School Premises.

Table 5: Schools Providing Mid-Day Meal, School Providing Mid-Day Meal but Not Prepared in School Premises and Percentage of School having Kitchen Sheds (In%).

Years	Percentage of School Providing Mid-Day Meal (Government and Aided Management)	Percentage of School Provided Mid-Day Meal but Not Prepared in School Premises (Government and Aided Management)	Percentage of School Having Kitchen Shed (Government and Aided Managements)
2014-2015	98.05	0.23	80.01
2015-2016	98.30	0.21	89.15

Source: UDISE, Elementary Education Report Card: 2015-2016

Table 5 shows that the percentage of schools providing mid-day meals under government and aided management was 98.05% in the year 2014-2015 and increased to 98.30% in the year 2015-2016. The percentage of schools where mid-day meals were provided but not prepared on the school premises was 0.23% in 2014-2015 and decreased to 0.21% in 2015-2016. In terms of schools with kitchen

sheds under government and aided management, the percentage was 80.01% in 2014-2015 and increased to 89.15% in 2015-2016.

Here, the researcher has presented a discussion of some of the major findings of this study. Further, the researcher has also presented educational implications of the findings and has given some suggestions for future studies.

Discussions and Conclusions

The Mid-day Meal Scheme was launched in Uttarakhand on September 1, 2004, by the Government of India. The scheme aims to improve the nutritional status of school children and promote education by providing them with cooked meals during school hours. The implementation of the scheme is done by the State government in collaboration with the Central government.

The concept of Public-Private Partnership or PPP is a mode of implementing government programs/schemes in partnership with the private sector. As a result, many corporate sector and NGOs came forward. The shift to an NGO-cooking the foods, from cooking food in individual school premises, marks lots of improvements or resolution of the issues related to the Mid-Day Meal programs. Fake enrolment provided by teachers to get large quantities of food grains and extra cooking costs, teachers' workload because of the responsibilities related to the success of the implementation of the MDM, involvement of students in the cooking process, cutting of teaching time, the unhygienic atmosphere of the school, etc. were some of the issues related with the Mid-Day Meal. The introduction of PPP has reduced the problems to a large extent. The teachers as well as the government officials are satisfied to a large extent by the introduction of NGOs.

The MDMP has achieved success in alleviating classroom hunger and persuading poor families to send their children to school. Most of the children attending government schools come from the poorest of the poor families. With income below the poverty line, for most of these children having one square meal a day was sometimes not possible. At least for some of them, the mid-day meal is the only meal they had in a day. The program has increased enrolment and attendance rate reduced dropout rate and shown improvement in retention. Further, intensive monitoring of the program at the school level as well as at the NGO level by government officials and community participation improved the functioning of the mid-day meal program. Sharing of common meals enhanced socialization and reduced prejudices.

Most of the students, teachers as well as parents felt that the scheme should continue. Most of them are satisfied with the quantity of food supplied by the NGO. Some of them questioned the quality of the meal provided. To improve quality, an adequate number of cereals as well as good quality vegetables especially green leafy vegetables, should be included in the meal to combat deficiencies in micronutrients.

Further, a few more constraints still exist like distribution of the meal in an unhygienic way, lack of cleanliness of the areas where the meal is served to children, lack of basic facilities such as drinking water facility, toilet facilities, etc. the general opinion of the beneficiaries and to some extent functionaries is that the schools may be supplied with still better quality of food. Further, to improve the quality of food, the food samples should be sent to laboratories for detailed analysis with reference to micro-nutrients, protein, and calorie content. Community involvement should be increased to increase the accountability of functionaries.

Overall, the MDMS functioned well despite certain inadequacies and shortcomings. The beneficial outcomes on educational performance are quite evident. The nutritional aspect needs a little more attention as well as monitoring.

Suggestions

1. Many of the parents and students suggested fruit should be provided at least once a week.

2. The menu should change every day by the NGO. Rice and chapati were provided on alternate days along with 20-gram Dal and 50-gram vegetables. On Tuesday Halwa, Puri and vegetables should be provided to the students at government primary schools. A specific calendar menu for every day should be provided by the State Government and the NGO should follow it.

3. The cooking cost was utilized for the procurement of cooking ingredients such as cereals, vegetables, condiments, salts, sugar, fuel, etc. from the local

market by the NGO. Condiments having ISI marks should be used.

4. Ensure that the stipulations regarding hygiene, quantity, and quality of cooked food are maintained, and appropriate supervisory mechanisms should be developed at the local level. Management information systems should be established from the state to the local level.

5. Inspection should be conducted by using a specific checklist by the officials of MDM. The checklists should be submitted to CEO Zila Panchayat. They inspected fifteen schools per month. Surprise visits should be conducted by government officials.

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Community Radio and Its Prospects for National Education Policy–2020

Swagata Das*

Community Media organizations are autonomous organizations and run neither by the Government nor by the Commercial organizations. They are run by and for the benefit of a community. Community media refers to a kind of media controlled and created by a community whose ultimate aim is to serve that community. It can be a Community Radio, a television station, a local organization, grassroots journalism, and maybe citizen media, whether online or offline. A vibrant community-based press may be a vital part of a diverse and healthy media system. According to UNESCO Community Media plays a crucial role in ensuring media pluralism and freedom of expression to the voice and is also an indicator of a healthy democratic society. According to the National Education Policy—2020 (NEP—2020), the main aim is to demonstrate to the students, how participatory communication theories could be used to produce various forms of media programming with the community to introduce the principles and concepts of community media and to provide students with practical experience in producing content and programs in collaboration with the community. The new education policy's other intention is to help equip students with knowledge and skills to work in and/or manage the community to produce content of a non-commercial nature oriented towards the community and also produced with the community. Hence in light of the above point of view 'Community Radio' is an appropriate community media in crafting the New Education Policy (NEP) curricula have been the Endeavour to maintain uniformity in the syllabi of various mass communication courses being run in the country as a whole, subject to the local and regional requirements.

The term community media is a widespread term, according to several social science researchers "Community media mean different things to different people they could have varied practices, and they may also take various forms such as audio, video, online and print" (Sinha and Malik, 2020).'Community media may be defined as any form of media that is created, managed, and controlled by members of a community or any social group (Dutta & Ray,2017)'. 'In community media community participants plan, produce and present their programs, they play the role of producers, performers, and planners' (Berrigan,1979)'. This term is also referred to as alternative, participatory, tactical, grassroots, or radical media(Downing,2001; Howley,2013; Sinha & Malik,2020)' Accessibility' 'participatory' is considered the main features of community media (Carpentier et al..2010) Milan, 2009, Sinha & Malik 2020).

Social Responsibility of Community Radio

Social work is an important aspect falling in the category of social sciences which has both practical and theatrical appearance. Students of social sciences, mainly Media studies should be compulsorily made to opt for an added course in social work as it enables them to deserve work in nongovernmental organizations(NGO), where it will be an added value addition and may help them to successfully compete for jobs.

Community Radio is no doubt an alternative medium to public and commercial media as well as social media. It has a greater focus on local issues of concern and facilitates public platforms for debate and discussion, and being a free media it is also a base of democracy. Information presented in digital media is expressed and absorbed in a different way than when it is presented in traditional media. For gaining social power, literacy has always been seen as a means even though not everyone has access to such activities, today's world is saturated with digital media. To prepare students to participate in the political, social, and economic aspects of society it is critical to incorporate these technological advancements into the educational system.

The observation is that, being the platform of social work the bondage between the community people and local community radio stations is getting strengthened day by day. Now Community radio has become the instrument for the livelihood, and battle of the rural people and also upholds creative growth and democratic spirit at the community level.

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During an emergency, whether it's a fire, tornado, or other immediate campus emergency, a community media crisis plan can help institutions proactively prepare. Many campuses have automated messaging alerts set up; using community radio also enables people to be updated in real-time. Institutions can use community radio listening which involves analyzing conversations and trends related to any brand to aid with public relations crisis management plans.

Community News is a prime strength that gives community radio the inside track in competing against larger commercial or governmental stations. It should be a part of an ongoing and future process that is supporting progress and development in the country. Regular local news broadcasts in the context of a process are therefore the lifeblood of community radio. It can also present news bulletins that include regional, national, and international.

Community Radio promotes good governance because in poor communities local authorities and politicians can easily take advantage of citizens, either individually or as a group in part because the marginalized oppressed have no way to complain. Community Radio helps people to obtain their just rights by giving them a platform to air their grievances. By playing a community watchdog role Community Radio makes local authorities and politicians more conscious of their public responsibilities.

According to 'Girad, 1992' Community Radio is there "to serve people' to encourage their expression of their views and participation, and to value 'local culture'. Its purpose is to 'give voice to the voiceless', the marginalized groups and oppressed communities far from large urban centers, where the population is too small to attract commercial or large-scale state radio'.

Community Radio has the potential to make a strategic contribution to education and as well as social development through its participatory nature. The people of the Northeastern region taking more initiative and continuing their endless efforts to set up more and more community Radio stations in backward and downtrodden areas, and are poised to grow from strength to strength.

Media has no doubt an important role in the development of society. It plays the pivotal role of an educationist and also performs watchdog duty in every field. The term development means what is necessary for a better living in society. It includes not only economic growth but also human development which consists of health, nutrition, education, and well-established environment, livelihoods, agriculture rural development programs, HIV & AIDS, pandemic, youth development, cultural heritage, drug abuse, prevention rights of children, capital investment, woman's right and social security, human rights, natural disaster and many more. Community Radio is truly a medium for grassroots communication. People can broadcast programs that focus on local concerns. It empowers people to identify problems and at the same time find solutions.

Community Media plays an important role concerning communication for development and Community radio is by far the most effective medium to share information with members of systematically marginalized communities. Generally, individuals are quite enthusiastic concerning discussing matters of local interest, in their dialect and languages, this includes, folk songs, historical narratives, cultural events, and traditions followed by their communities at a micro level. Community radio is a vehicle for introducing change in people's attitudes, a platform for citizen empowerment, and an essential tool for fostering inclusiveness, democratic decision-making, and gender sensitivity. Community Radio has embarked on a path to re-igniting the spark concerning local folk and forgotten art forms, it has become an integral tool in preserving the cultural heritage of marginalized communities.

Community Media and Community Radio:

Community media may be print, radio, television, web-based, or mixed media. A community is considered to be a group of people sharing some familiar characteristics and or traits such as sharing a common geographical area of a specific area sharing economic and social life through business and trade, and exchange of goods and services among themselves (BNNRC, 2010). Another way, the term 'community' can be defined as a condition in which people find themselves engaged in interwoven and meaningful relationships with their fellows (Mtimade et al..1998).

Regarding Community Radio, the term 'community' refers to a collective or a group of people sharing common characters and interests. The term 'community' can be defined as; a geographically based group of persons, a social group or sector of public who have common or specific interests (Mtimade et al..1998).

Community Media is a form of media that functions in service of a community or by a community. It is the rise of all kinds of participatory and collaborative media practices that have developed in the journalistic context of 'community media' 'citizens media' grass root journalism' or any radical alternative to on and offline mainstream journalistic practices. Another way is having access to or creating local alternatives to mainstream broadcasting, like local communities, newspapers, radio stations, or magazines. Community Media aids in the process of building citizenship and raising social awareness. "Participation" and "access" are a large aspect of the rise of community media. Those who create media are being encouraged to involve themselves in providing a platform for others to express their views. Community media is often given parameters when being defined by groups but often challenges these boundaries with its broad yet narrow structure.*(https://en.wikipedia. org/wiki/community-radio)*

The role of Community Radio in a community is to enhance the participation of community members in the development process and capacity building in rural areas with education. Community Radio helps to promote and protect local dialects. Arts, crafts, traditions, and culture. It also provides opportunities for people to upgrade their skills and also enhance their creative talents and preserve and promote their traditional wisdom, skills, and knowledge. Community Radio is a reliable tool to monitor the access to rights and entitlements by the citizens the broadcast power of Community Radio to take the information to the last mile, have used the medium to promote its development programs and campaigns through Community radio, by its decision-making structures and process associated with the implementation of a Community radio station are expected to be transparent and participatory.

Media Bias and Democracy in India is also a burning issue in India now. Discussing the impact of widespread media bias on democracy. It has been observed that the media should serve to inform the public not influence the public. For instance, during the COVID-19 pandemic in April, reports emerged that, at the request of the Indian Government Twitter censored 52 tweets criticizing the government's handling of the pandemic situation, as well as pro-government TV channels were blaming the farmer's protests for limited oxygen supplies for COVID-19 patents, though the scarcity of supply was due to poor public health infrastructure. This reporting was not only misleading and traumatic to those who were affected by the pandemic but also posed a major threat to India's vibrant democracy. A biased media also prevents citizens from receiving the right information which might be harmful to public wellbeing. In a democratic society, critical press/media is essential to convert media bias to media neutrality, and the Community radio or any other community media in India properly doing its job- serving to inform, not influence the public mainly at the grassroots level.

Participatory media i.e. community media is a force that helps communities to recognize their problems for social development, as community media in India has proven itself a dynamic force. It empowers marginalized voices and addresses local issues often unnoticed by mainstream media. In the present era, media plays a significant role in influencing society. No doubt Community media like Community Radio in India exemplifies the power of local journalism and the determination of communities eager to be heard. Being a more inclusive and participatory media landscape in India may flourish by understanding, supporting, and interacting with community media.

Last but not least new media is less sensitive towards development issues, especially at the grassroots level. The development activities of society need to be properly projected in the media. It is sure that, people's participation in monitoring and functioning of the media will also be required, which may be needed for an active people's media i.e. community media.

Community Radio and New Education Policy-2020

According to 'Bertolt Brecht' renowned German Playwright and author "Radio is one-sided when it should be two. For mere sharing, it is purely an apparatus for distribution. So, the positive suggestion is that, change this apparatus over from distribution to communication. It would be a suitable communication apparatus in public life. Radio serves as an interactive and collaborative medium for communication the finest possible tool for education. We can treat Radio as a powerful mass medium that educates and informs us as well as preserves the local identities of communities and helps to reach out to empower marginalized sections of the society".

In India where every state has its own language and distinctive cultural identity. Community Radio stations are also a repository of local folk, music, and cultural heritage. It is also an instrument of positive

social change which makes itself an ideal tool for community empowerment. Community Radio can probe into linguistic progress which is also the basis of cultural identity. Every language has its history and elements related to politics and the environment. The responsibility of bringing uniformity among different languages and dialects to protect cultural integration also lies on the shoulders of community radios. We should not be forgotten the cultural heritage put together by our forefathers. To know the culture, locality, region and even the country is the ultimate aim of the new education policy. Community Radio is fully capable of imbibing the wisdom of man, spiritual tempo, and art among them. It can play an effective role in keeping different communities and language groups spread out in remote regions and across diverse geography together.

Present scenery regarding the status of education in India today is that most of the schools in the rural areas are without teachers, libraries, lab equipment, training tools and other basic facilities and the Radio has the full potential to fill this gap by providing quality education, vocational and skill development training to the disadvantaged students of the rural areas. It can be a complement to the formal system of education being an important instrument of mass media. We can quote the historic verdict of the Hon'ble Supreme Court of India, on 9th February 1995 that, "airwaves are public property and their uses have to be controlled and regulated by the public authority in the interest of the mass people and to protect/prevent the invasion of their rights *(https://mib.gov.in/document/supremecourt-judgement-airwaves)"*

Community Radio emerges from within the community which could not/shouldn't be imposed from above (Jallov, 2017). The Radio programs have to be designed based on community access by reflecting the necessity and interest of the community it serve. It also has to focus on the local language and dialects and design the programs by promoting local context and culture, diversity, identity, and aesthetics. Community radio empowers communities to promote and build local identity, preserve local dialects and culture by focusing on local interests, encourage them to participate from all sections of society, and at the same time create opportunities for a diversity of voices, share their opinions through dialogues and discussions and also strengthen the democratic processes, an active agent of social change, increase awareness about rights and responsibilities, transparency, And also promote good governance(Singh,2018).

Community Radio can be an effective medium for education due to its accessibility, affordability, and availability. The close ties with the communities allow Community radio stations to know the listener's requirements and give good access to the resource pools (Thomas J, 2001)

Regarding community engagement in India, an expert committee was set up by the then-planning commission in 2011 to analyze the purposes and principles of community engagement in the form of social responsibility, and MHRD also recommends fostering social responsibility and community engagement in India several elements for new education policy 2020.

"The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, resilience, creative imagination, sound ethical mornings, scientific temper and values. It aims at engaged and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our constitution".

Post-pandemic context and NEP-2020 also demand that community engagement be mainstreamed in all teaching-learning research and services. The curriculum of 2(two) credit courses needs to focus on community engagement and 2(two) credits on their regional community context.

Relating to fostering community engagement and social responsibility NEP-2020 describes that a quality higher education must enable enlightenment, personal accomplishment constructive public engagement, and a productive contribution to society to prepare students for more meaningful and satisfying lives and work roles and also enable economic independence. It also states that "Higher education plays an extremely important role in promoting social well-being and developing India as envisioned in its constitution a democratic socially conscious, cultured human nation to upholding liberty, equality, fraternity, and justice for all higher education significantly contributes towards the sustainable".

Colin Fraser and Sonia Restrepo-Estrada (1998) sum it all up: the success and failures of most development projects are often determined by two crucial factors, that is communication and people's involvement.

Even though communication for development came into being in the 1960s, and has clearly shown its usefulness and impact in change and development actions, its role is still not understood and appreciated to the point that it is routinely included in development planning(Fraser and Restrepo-Estrada,1998;39). Many well-intended projects are thought out in places remote from the actual context in which they are supposed to be implemented. Consequently, they fail to understand the complex power relationships and the cultural and communication processes existing at these local levels. The models of participatory communication are closely related to both the access and the human rights approaches to development. Stemming from the theories of the Brazilian pedagogies Paulo Freire and many experiments with alternative communications that appeared in the late 1960s and 1970s- this model explicitly affirms that people's participation in communication is vital to the success of any given project. It is based on a conscious effort to involve people in their development. The success of this model is self-evident. The use of popular theatre in development, Community Radio witnesses this success.

Conclusion

Though Community Radio in India is still in the developing stage, they are not been utilized properly to the extent it is capable of. So, it needs to be channeled properly. The present Government's liberal policies in recent years can add strength to Community Radio in terms of finance and human resources, which will surely go a long way in making the Community Radios more innovative with valuable programs for the development of the Community in particular and the nation in general. Last but not least, the convergence between radio and the internet is providing new strength to Community Radio and has enormously increased networking opportunities.

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Diversity Fosters Creativity

Gagandeep Kang FRS, Director, Enterics, Diagnostics, Genomics and Epidemiology-Global Health, Bill and Melinda Gates Foundation delivered the Convocation Address at the 54th Convocation Ceremony of the Indian Institute of Technology Delhi on August 12, 2023. She said, "Embrace challenges with curiosity, approach life with a scientific mindset, and let evidence and integrity guide your path. Remember that you have the power to shape a future that is not only technologically advanced but also compassionate, just, and more equitable than the world we have today. The challenges we face today are many and daunting, but with your education, intelligence, and passion for science, you are equipped to find solutions that will make the world a better place." Excerpts

This is such an exciting time for you-years of hard work, struggle, highs and lows, good times, bad times, not knowing how you would do and persisting anyway, have brought you to this moment, where you are ready finally to step out into the world, armed with an education from one of the best institutions in India, and in the world. You are privileged, in the opportunities that you have created and that you have received. You are equipped with tools that will help you build your lives, and can change society.

Your alma mater is a special place. IIT Delhi's vision is to contribute to India and the world through excellence in scientific and technical education and research, to be a source of pride for all Indians and be a resource for society.

In other words, you are called on to excel and to serve.

A little over 42 years ago, my father and I took a train from Delhi to Madras so that I could attend the interviews at the Christian Medical College, in Vellore. This institution has as its motto, 'Not to be ministered unto, but to minister'. In other words, to serve.

My father was in the Indian Railways, and both my grandfathers had worked for the government, before Independence, and the idea of pride in India and the need to be of service to our country was deeply-ingrained in my family. Because of my father's transfers, I was without a domicile anywhere, so had no option but the colleges that did not have state-based reservations. Despite having travelled and moved around a lot, I had never been so far south before, and to see young girls in pavadais, or half-sarees, and men in lungis was new to me, since all of my school education had been in Bihar, UP, and Bengal. But I got to CMC, and stayed in the Women's Hostel, with some of the students who had agreed to host interview candidates. I found that there were students from all over India, and despite the name of the college, there were plenty of others, who, like me, were not Christian. Over the three days of interviews conducted by the faculty and conversations with students in the hostel, I began to feel that despite it being so different from everything education, so that they would return home and work in local hospitals.

In medicine, service is usually thought of as looking after patients, solving their problems through medical management, or surgery. As you will recognise, there is a hierarchy in fields of specialisation-you can imagine neurosurgeons and cardiovascular surgeons as the top of the field, and those who work in laboratories or teach the basic sciences, as being those who do not quite measure up to the ideal of directly saving lives. With the deeply-ingrained motivation to serve, most of CMC's graduates choose clinical fields, and more than any other college I know of, a large proportion of graduates work in remote and rural locations. I chose differently, went into a diagnostic laboratory and emerged from that to move even further from individual patients into research. When people think of medical research, what frequently comes to mind is oncology, neuroscience, or genomics. My research was nowhere near these glamorous fields. I began to work on a problem that is common, that affects all of us at various times in our lives, but has the greatest impact on the poorest and most vulnerable amongst us-the more discreet name is 'enteric infectious disease', but more bluntly, I have spent the last 32 years working on diarrhoea in Indian children.

It has been an incredible journey, I have learnt how difficult it is to accurately measure even a common disease, how little we know after decades of effort, the importance of bridging basic, applied, and translational science to solve problems, the critical need for teams and collaborations and of moving beyond science to policy and communication.

I have had the opportunity of working with the best scientists in India, including Dr. MK Bhan, who

had a base at IIT Delhi and was the person who took forward the first vaccine developed in India. From my base at CMC, Vellore, I worked with the Government of India and with the World Health Organization and international research funders in the UK, the US, and Europe. We were learning from the communities we worked with, and the children who joined our studies before they were born, and applied it to try to mitigate the damage that resulted from diarrhoea. We failed often, succeeded occasionally, and now I can look back and say that the vaccines we worked on saved about 30,000 children's lives in India every year. The hundreds of other people who worked on the vaccine and I have served.

These vaccines are now going to Africa and the Middle East and will likely be in Latin America soon. The work of Indian scientists and Indian companies provides tools that benefit the world. This is just one example of what is possible from a base in India.

You are stepping into the world equipped with the power of science and technology. Science has solutions to offer for many of the problems we face in society, and the privilege of receiving high-quality education and training from an esteemed institution like IIT Delhi comes with responsibility to use your skills for service.

In the ever-evolving landscape of our world, science and technology have played an instrumental role in shaping human progress. From conquering diseases to exploring the cosmos, from communicating across borders to providing sustainable energy solutions, science has been a beacon of hope, a catalyst for change, and a driver of innovation. As graduates of the IIT, you are now part of this illustrious lineage that has changed the world for the better, and I am confident that you will find a way to be of service.

Next, I want to emphasise the importance of living your lives according to the principles of science. The scientific method, with its emphasis on evidence-based inquiry and rigorous testing, is not just confined to laboratories and research papers; it can be a guiding philosophy for how we approach life's challenges.

First and foremost, never stop asking questions. The spirit of curiosity is what drives scientific progress. Approach every problem, be it personal or societal, with an inquisitive mind. Ask why things are the way they are, seek understanding, and challenge assumptions. Embrace uncertainty, for it is the fertile ground from which new discoveries emerge.

In every aspect of your life, strive to generate evidence before making decisions. Avoid hasty judgments and baseless beliefs. Be open to different perspectives and be willing to adjust your views based on the evidence at hand. This approach not only leads to better decision-making but also promotes intellectual humility and growth. When we were conducting our studies on rotaviruses in the community, two vaccines were in development. Our findings indicated that one of the vaccines was unlikely to do what it was supposed to do, protect children from rotavirus diarrhoea. We tried to present this information, but the scientific aristocracy at the time told the world that we were wrong. We approached our data in many different ways, but it always resulted in the same conclusion: that one vaccine strain would not work, so we stuck to our position and held out for four years of not being accepted by our professional community, until we were finally vindicated. Standing up for science is not easy-but without it, we build on a foundation of sand.

Integrity is an indispensable trait in the pursuit of science and in life. Let it guide your actions and decisions. Be honest; not just with others, but also with yourself. Admit your mistakes and learn from them. Remember that the pursuit of truth demands honesty, even when the truth is inconvenient or uncomfortable.

IIT Delhi has a long-standing tradition of producing outstanding alumni who have excelled in various fields, making significant contributions to both India and the world. This culture of rigour, dedication, and pursuit of excellence has become the hallmark of an IIT graduate. As you enter the next phase of your life, hold onto this legacy of a scientific culture and let it inspire you in all you do.

Finally, let us address a crucial aspect of personal and professional progress-the necessity for engagement with diversity in contributions, diversity of gender, of language or culture or economic background. Historically, women and different societal groups have been underrepresented in STEM fields, and this needs to change.

Diversity fosters creativity and leads to more comprehensive problem-solving.

Biology and social constructs lead to the famous leaky pipeline, but looking back at my own research group, we have had plenty of weddings and babies. Flexibility was required, but among my students and colleagues who have become outstanding researchers in their own right, the women are as strong as the men. All we needed to do was to recognise that needs differ-- just a little accommodation goes a long way and always pays off in the long run.

Science and the humanism that acknowledges the criticality of diversity can be powerful allies in the quest for a better world. We must embrace evidence-based decision-making, but also remember the importance of different views of the world and the human touch in all that we do. We must use our knowledge and expertise to address not only the technical challenges, but also the human ones. The more dimensions we encounter, the wider our world view and the clearer it is that empathy, kindness, and compassion are just as essential as equations and algorithms.

As we witness rapid advances in science and technology, we are presented with immense opportunities for good. The power of artificial intelligence, biotechnology, and renewable energy holds the potential to address pressing global challenges such as climate change, poverty, and disease. However, we must be wary of the digital and other divides that threaten to-or do-create inequity in society. The past few years have shown us the benefits of science and technology come most rapidly to those who have built strong foundations. India may not be a wealthy country, but we have invested over decades in providing the resources to institutions of higher learning to ensure that we can provide world-class knowledge and training across a range of specialisations in STEM. As you move forward in your journey, embrace the responsibility that comes with your education. Remember that this is a gift from the people of India to you.

Carry with you these three thoughts: the importance of service, the scientific approach to life, and the crucial nature of diversity and empathy. They will give you the conviction to use your education for the greater good and build the spirit of science, the passion for inquiry, and the willingness and desire to work with and support inclusion.

Embrace challenges with curiosity, approach life with a scientific mindset, and let evidence and integrity guide your path. Remember that you have the power to shape a future that is not only technologically advanced-but also compassionate, just, and more equitable than the world we have today.

The challenges we face today are many and daunting, but with your education, intelligence, and passion for science, you are equipped to find solutions that will make the world a better place. Congratulations, once again, and may you lead lives that make your alma mater and your country proud, and touch the hearts and souls of those you encounter along the way.

Thank you. Jai Hind.   ❑

CAMPUS NEWS

National Workshop on National Education Policy–2020

A two-day National Workshop on 'National Education Policy—2020: Model Curriculum and Content in Geography' was jointly organized by the Central University of South Bihar (CUSB) and Vidya Bharati Uchcha Shiksha Sansthan (VBUSS) in the collaboration of Indian Council of Social Science Research (ICSSR), New Delhi, recently. The event was jointly coordinated by the Department of Education and the Department of Geography, Central University of South Bihar, Gaya. About 100 participants from various states of the country participated in the event. During Inaugural Address, Prof. Narendra Kumar Taneja, General Secretary, VBUSS and Former Vice Chancellor, Chaudhary Charan Singh University (CCS), Meerut highlighted the significant contribution of VBUSS in the field of education. He discussed the need for the Bharat-centric curriculum by emphasizing the significance of education in shaping a society rooted in indigenous philosophies and encouraged participants to take pride in their 'Indianness/*Bharatiyata*'. Prof. Koppella Narayana Prudhvi Raju, Banaras Hindu University (BHU), Varanasi delivered a discourse by invoking the historical perspective of *Bharat* as a superpower, highlighting its glorious past eminence not through military prowess but as a knowledge society. He cited the evidence of *Bhartiya Shastra* and Rishi for contributing to the field of scientific knowledge like Vedas, Kannada's work, and *Bhartiya Darshan's* notion of 'ना आदि है ना अंत है' etc. for understanding the cosmic world.

Prof. Kameshwar Nath Singh, Vice Chancellor, CUSB Gaya emphasized the focus of NEP-2020 on 'Education for Nation' urging that education must be deeply rooted in *Bhartiya* culture, and ethos committed to National Development. He stressed the need to harness geographical knowledge for the welfare of the nation, emphasizing the study of 'spatial organization and management' akin to other specialized fields like business and hotel management.

Prof. Kaushal Kumar Sharma, Jawaharlal Nehru University (JNU), New Delhi advocated for a geography curriculum that makes sense and encompasses crucial aspects such as the relations between economy and environment, globalization, development, national histories, political geographies, social justice, sustainability, and climate change.

Prof. Shio Muni Yadav, B N Mandal University, Bihar provided a compelling discourse on the often-overlooked contributions of *Bharitya* Geographers. He passionately underscored the cultural aspect of geography and articulated how cultural and religious tourism may be incorporated into the geography curriculum. Prof. (Dr.) Shri Kamal Jee, J P University, Bihar delved into the rich tapestry of ancient *Bhartiya* texts, highlighting the comprehensive coverage of concepts like '*Vedic Krishi Vyavastha*'. Prof. Virendra Kumar, Magadh University, Gaya brought forth thought-provoking perspectives on the intersection of technology, culture, and education. His insights served as a call to recognize and integrate traditional knowledge into contemporary agricultural and educational frameworks. Prof. Vishambhar Nath Sharma, Banaras Hindu University, Varanasi emphasized the integration of the study of regional planning and techniques from the perspective of the traditional *Bhartiya* Indigenous knowledge system. Dr. Sanjay Kumar Singh, UPRTOU, Prayagraj highlighted the importance of taking students on virtual field trips at every college and university levels to have some practical insights into the different Geography phenomena. Prof. Narendra Kumar Rana, BHU Varanasi addressed the various challenges in making the course of Geography in the *Bhartiya* Context. He focused that it should be done in such a way that it could yield the fascinating outcome and establish a milestone in making the curriculum an *Bhartiya* centric. Prof. Sacchidananda Pandey, Tilka Manjhi Bhagalpur University shared his experiences of rural life and put a light upon the indigenous lifestyle of the rural people and highlighted the importance of sustainability of the earth and environment. Dr. Binod Kumar Singh, Director, National Atlas and Thematic Mapping Organization (NATMO) Kolkata highlighted the role of Artificial Intelligence and Deep Learning to keep updated with the market demand. Further, he said that NATMO is also pioneered in the art of map making for visually impaired persons, automatized *Braille Mapping* with modern state of art technologies.

Prof. Rabi Narayan Kar, Principal of Shyam Lal College, University of Delhi, Delhi highlighted the importance of interdisciplinary approach and said that there should be a course related to 'Commercial Geography' and emphasis on including the indigenous small-scale industries and employability with vocal for local to make '*Atmanirbhar Bharat*'.

Prof. Arun Kumar Singh, Department of Geography, Banaras Hindu University, Varanasi in his prolific address cited the evidence of the modern urban planning of *Bharat's* rich cultural heritage. He explained various models and theories such as Core–Periphery Model by Friedman, Sector Theory by Homer Hoyt, and many such and said that examples of all such concepts are evident in *Bharat* and there is a mention of all these concepts in *Bhartiya* texts from which inferences can be drawn in the new curriculum. Prof. Yamanur Venkata Krishnaiah, Central University, Tripura cited many sources like the contribution of Maharshi Sushruta, Acharya Kapil, Acharya Bhardwaj, and Aryabhata, etc. showing the extent to which Medical Geography in Bharat was developed. Prof. Prafull Kumar Singh, Head of the Department of Geology at Central University of South Bihar, Gaya highlighted the importance of aligning educational practices with contemporary needs. Prof. Mukesh Kumar, Head, Department of Educational Studies, Mahatma Gandhi Central University, Motihari cited the various examples related to the best practices in ancient times like experiential learning, sports integration, and art-integration in the teaching-learning process.

On the concluding day of the event, in his Keynote Address, Organizing Secretary, Shri K N Raghunandan emphasized to develop of an indigenous education system at all levels of education where the education should be provided according to the age-group, culture, and geographical features. He explained about the *Jadui Pitara*, initiatives of NCERT at Pre-Primary level and value-based education of tribal communities, the adoption of orphaned children in Chhattisgarh, and the enduring joint family system in Dharwad. He said that higher education institutes should redesign their curriculum in light of NEP- 2020 to fulfill the needs and aspirations of a dynamic society. We have to focus on 'Bharat Centric Education' to groom the '*Bharatiya Yuva*' who have pride in Indianness and are well-versed in 'Bharitya Gyan-paramapra'. He said that VBUSS initiated a redesign of the curriculum of more than 20 disciplines of higher education in collaboration with different higher education institutions. Prof. K N Singh, Vice Chancellor, CUSB stressed the need to harness geographical knowledge for the welfare of the nation, emphasizing the study of 'spatial organization and management' akin to other specialized fields like business and hotel management. Further, he said that Bharat-centric education, the judicious blend of 'Bhartiya Gyan Parampara' and 'Modern Education' develop a sense of respect towards fundamental duties and constitutional values and a conscious awareness of one's role and responsibilities that helps to make a more inclusive, equitable, cohesive, responsive, productive and global citizen considering the trinity of 'Demography, Democracy and Diversity' (3Ds). In this regard, geography education helps to ensure significant contributions to achieving the SDGs, therefore, curriculum, content, pedagogical, and assessment practices in Geography at every spectrum of education need to be redesigned/reimaging in the perspective of NEP -2020.

Prof. Ravi Kant, Director of the event shared valuable insights, emphasizing the workshop's role in shaping education aligned with the NEP -2020. Simultaneously, he also emphasized that there must be courage inside us to keep our subject matter and philosophies at the global level. Prof. Kiran Kumari, Co-Director of the even presented the detailed report and underscored the need for inclusivity and a broad range of perspectives within the study and practice of Geography. Lt (Dr.) Pragya Gupta, Assistant Professor, Department of Teacher Education, CUSB and Dr. Manjit Kr Singh, Assistant Professor, Department of Geography, CUSB moderated the programme. At last, Convener, Dr. Tarun Kumar Tyagi thanked all for their contribution to conducting the programme smoothly and effectively. The event ended with the National Anthem.

International Conference on Pioneering Developments

A three-day International Conference on 'Pioneering Developments in Computer Science and Digital Technologies' is being organised by the Department of Computer Science and Engineering, National Institute of Technology Delhi from August 02-04, 2024 through Hybrid Mode.

The year 2024 marks a pivotal moment in the realm of computer science and digital technologies,

as it witnesses groundbreaking advancements that are set to shape the future of our interconnected world. At the forefront of these pioneering developments is the emergence of quantum computing, which promises to revolutionize computation by harnessing the principles of quantum mechanics. Quantum computers, with their ability to process vast amounts of data at unprecedented speeds, are poised to solve complex problems in fields such as cryptography, drug discovery, and climate modeling, paving the way for new frontiers in technology and science. Additionally, Artificial Intelligence (AI) continues to evolve, pushing the boundaries of what machines can achieve. In 2024, AI systems are expected to demonstrate a deeper understanding of context, enabling more natural and sophisticated human-machine interactions. Ethical AI and responsible AI deployment are also prominent themes, with increased focus on ensuring that AI technologies are used ethically and with transparency. The Internet of Things (IoT) has matured to a point where it seamlessly integrates with our daily lives. In 2024, IoT applications have expanded into areas such as healthcare, agriculture, and smart cities, enhancing efficiency and quality of life. Advancements in 5G and beyond are the backbone of this expansion, providing the necessary connectivity to support a growing ecosystem of IoT devices. Cybersecurity remains a paramount concern in this digital age, and 2024 sees significant strides in the development of next-generation security solutions. Innovative approaches to protecting data and systems include advanced encryption techniques, AI-driven threat detection, and decentralized identity management systems. Lastly, the year 2024 would showcase progress in the field of biotechnology and its intersection with computer science. Computational biology and bioinformatics have become indispensable in genomics research and drug discovery, leading to groundbreaking breakthroughs in personalized medicine and disease treatment. The Tracks of the Event are:

Data Analytics and Mining

- Data Retrieval.
- Big Data Storage Techniques.
- Data Mining and Warehousing.
- Data Visualisation.
- Modelling Structure and Storage of Data.

- Scalability and Portability Issues of Data.
- Data Privacy and Security.
- Parallel Processing of Big Data.
- Distributed Access of Data.
- Application of Big Data and Related Topics.
- Web Mining, Text Mining.
- Sentiment Analysis.
- Novel Theoretical and Computational Models.

Cryptography, Cyber Security and Network Security

- Security and Privacy in Mobile Systems.
- Security and Privacy in Adhoc Networks.
- Network Performance Analysis.
- Cyber Risk and Vulnerability Assessment.
- Intrusion Detection and Prevention.
- Visual Analytics for Cyber Security.
- Security and Privacy in Grid Computing.
- Biometric Security and Privacy.
- Security and Privacy in Wireless Sensor Networks.
- Cryptographic Aspects of Block Chains & Crypto Currencies.
- Cryptanalysis, Side-Channel Attacks and Defences.
- Trust Management.
- Cyber Harmony.
- Vehicle-to- Everything (V2X) Communications.
- Machine-to-Machine(M2M) Communication.

Cloud Computing and IoT

- Quantum Computing.
- Cloud Virtualization and IoT.
- Cloud and IoT Federation.
- Reliability and Security.
- Inter Cloud and Multi-cloud.
- Network Virtualization.
- Fog Computing.
- Cognitive Computing.

- Wireless Sensor Networks.
- Unmanned Aerial Vehicles.
- Ubiquitous Computing.
- Blockchain Technology.
- Cloud at the Edges and Mobile Cloud.
- Cloud Security.
- Hybrid Cloud Infrastructure for IoT.
- Security in IoT and Edge Cutting Technologies.

Artificial Intelligence and Machine Learning

- Pattern Recognition.
- Computational Intelligence.
- Augmented Reality and Virtual Reality.
- Signal Processing.
- Self Driving Vehicles.
- Robotics.
- Image Processing.
- Generative AI Use-cases.
- Machine Learning for Systems.
- Deep Fake Technologies.
- Recommender Systems, Computational Advertising, Multimedia, Finance, and Bioinformatics.
- Cognitive Computing.
- Audio / Video Recognition.
- High Reliability and Error Tolerance in AI.
- Time Series Prediction and Forecasting.

Digital Innovation in Healthcare and its Application

- Health Informatics and Electronic Health Records (EHR).
- Telemedicine and Remote Patient Monitoring.
- IoT Applications in Healthcare.
- Healthcare Data Privacy and Cybersecurity.
- Training and learning algorithms in healthcare systems.
- Augmented Reality (AR) and Virtual Reality (VR) in Medical Training and Treatment.
- Healthcare Robotics and Automation.
- Digital Therapeutics and Health Apps.

- Explainable AI in Healthcare Decision-Making.
- E-Health and Mobile Health (mHealth) Integration.
- Ethical Considerations in AI-Driven Healthcare.
- IoT, Fog & Cloud Computing-based Cyber Physical System for Digital Healthcare.
- Blockchain Applications in Healthcare.
- Precision Medicine and Genomics.
- Digital Mental Health Solutions.
- Healthcare Gamification for Patient Engagement.
- Ethical Considerations in AI-Driven Healthcare.

For further details, contact the Organising Secretary, National Institute of Technology Delhi, Delhi – 110036, Mobile No: 080033 89258/ 082925 56170, E-mail: *karanverma@nitdelhi.ac.in/ gautam@nitdelhi.ac.in.* For updates, log on to: *www. nitdelhi.ac.in/events/*

International Conference on Intelligent Circuits and Systems

A two-day International Conference on 'Intelligent Circuits and Systems' is being organized by the School of Electronics and Electrical Engineering, Lovely Professional University, Phagwara, Punjab from August 30-31, 2024**.** The theme of the event is 'Affordable and Clean Energy' (SDG 7). The conference provides an opportunity to:

- Motivate the research community to orient and extend their research to find new solutions for SDG 7 related problems, targets, and indicators,
- Exchange new ideas, applications and experiences,
- Find regional and global partners for future collaboration, and
- Add value to the path forward and road map for timely achievement of SDG 7 targets and indicators.

Sustainable Development Goals are the targets settled by global agreement for global development. There are defined 13 targets and 28 measurable indicators for SDG 7. The event aims to build a bridge between the academic community, R & D institutions, social visionaries and experts from all strata of society to present the ongoing research activities towards achieving the global targets of

SDG 7 and foster research relations between them. The Tracks of the Event are:

- **Track 1:** Power Electronics and Drives towards attainment of Targets and Indicators for SDG 7.

- **Track 2**: Artificial Intelligence, Machine learning and Deep learning towards attainment of Targets and Indicators for SDG 7

- **Track 3:** Power Systems towards attainment of Targets and Indicators for SDG 7.

- **Track 4:** Communication, IoT and Sensor Networks towards attainment of Targets and Indicators for SDG 7.

- **Track 5:** Big Data and Cloud Computing towards attainment of Targets and Indicators for SDG 7.

- **Track 6:** Embedded and VLSI Systems towards attainment of Targets and Indicators for SDG 7.

- **Track 7:** Control and Robotic Systems towards attainment of Targets and Indicators for SDG 7.

- **Track 8**: Miscellaneous towards attainment of Targets and Indicators for SDG 7.

For further details, contact Organizing Secretary, Dr. Krishan Arora, Associate Professor and Head, Power Systems, School of Electronics and Electrical Engineering, Lovely Professional University, Jalandhar-Delhi, Grand Trunk Rd, Phagwara, Punjab- 144001, E-mail: *icics@lpu.co.in*. For updates, log on to: *wwwlpu.in/events*

AIU News

Faculty Development Programme on Bridging Traditions

A six-day Faculty Development Programme on 'Bridging Traditions: Integrating Indigenous Knowledge into Higher Education Curriculum' was organized by the Association of Indian Universities—Academic and Administrative Development Centre, University of Science and Technology, Meghalaya from March 18-23, 2024, through online mode. Faculty members from diverse regions across India, including Indore, Maharashtra, Kerala, Madhya Pradesh, and various parts of Assam participated in the event, alongside faculty members from the host university. The Inaugural Session was graced by the presence of various dignitaries including Prof. Pralhad R Joshi, Vice Chancellor, Kumar Bhaskar Varma Sanskrit and Ancient Studies University, Nalbari, Assam; The President, AIU, Prof G D Sharma, Vice Chancellor, USTM; Dr. Pankaj Mittal, Secretary General, AIU; Dr. Amarendra Pani, Joint Director and Director (I/c) Research, Convener, AADC; and Prof. Amit Choudhury, Dean School of Technology and Management. The expertise of resource persons enriched the discussions, providing insights into incorporating indigenous knowledge into higher education curriculum. The discussions ranged from historical contexts to practical strategies for curriculum integration, addressing the importance of NEP 2020 and guidelines for incorporating Indigenous Knowledge Systems (IKS) into higher education.

Prof. Pralhad R Joshi, Vice Chancellor, Kumar Bhaskar Varma Sanskrit and Ancient Studies University, Nalbari, Assam discussed the importance of integrating the Indian Knowledge system into modern education curricula, emphasizing the need for extensive research across all fields due to the lack of proper documentation in ancient times. Much of the knowledge was preserved in manuscripts written in various languages, necessitating the learning of these languages and the integration of the mission to convert manuscript knowledge into the modern education system. The significance of Project NAMAMI, initiated by the Ministry of Tourism and Culture, Government of India in February 2003, was highlighted. This unique project aimed to unearth and preserve India's vast manuscript wealth, estimated to be around ten million manuscripts, covering a wide range of themes, languages, scripts, calligraphies, and illustrations.

Prof. S R Joshi, Professor Department of Biotechnology & Bioinformatics, North Eastern Hill University, Shillong discussed the distinction between knowledge acquired through formal education versus experiential learning, emphasizing that knowledge could be gained through both methods. A humorous example of scientists trying to measure a 'human quotient' based on a banana peel experiment illustrated this point. Moving on, the significance of documenting traditional knowledge and heritage, especially in cultures like

India where rich knowledge systems exist but often go undocumented, was highlighted. The importance of validating traditional practices scientifically to dispel superstitions and recognize their value was mentioned. The discussion underscored the importance of tangible and intangible heritage, emphasizing that documented knowledge became accessible to all, while undocumented knowledge remained confined to oral traditions. Examples from history, such as the heritage cities like Varanasi and Nalanda, illustrated the value of documentation in preserving cultural knowledge. The discussion extended to ancient herbs and oral traditions like the Rig Veda, showing how traditional knowledge had shaped various aspects of society over millennia. The Indian knowledge system and its significance in the context of the National Education Policy (NEP)- 2020 were delved into. The need to incorporate indigenous knowledge into formal education to instill pride in Indian heritage among learners was emphasized. The NEP's focus on integrating indigenous knowledge into the education system was seen as a means to preserve and enhance traditional knowledge for future generations. The importance of research and accurate incorporation of indigenous knowledge to inspire and inform education in India was stressed. Lastly, the narrative touched on the social and cultural aspects of indigenous knowledge, highlighting its role in shaping relationships, behaviors, and societal norms. The need for cultural assimilation, respect for ancestors, and other traditional values to foster unity and growth in society was underscored.

Prof. Rani Sadasiva Murty, Vice Chancellor of Sri Venkateswara Vedic University, Andhra Pradesh highlighted the different means of the Indian Knowledge System like Perception, Influence, Verbal testimony, and the requisites of Science like observation, hypothesis, experimentation, and drawing principles through deduction or induction. A mission of integrating ancient scientific research with modern sciences was emphasized, in collaboration with IITs, ISERs, and other National Scientific institutions. The discussion on Vedic Literature started with the term '*Kulapati*' being introduced as an intriguing concept used in ancient times to denote the roles of Vice Chancellor and Chancellor in one. These roles weren't separate entities but were encapsulated in the term '*Kulapati*'. Individuals like Rishinam Dasasahasram held this position, overseeing educational institutions where

students were revered as *'Rishis'* due to their pursuit of knowledge for its intrinsic value rather than for immediate practical gain. Each ashram typically accommodated 10,000 students, supported by 1,000 teachers, maintaining a ratio of 10 students per teacher as prescribed by ancient texts. Education covered various domains, with *'Shastram'* encompassing what we now identify as science. The Ancient Indian knowledge systems recognized three means of acquiring knowledge: direct perception (*Prajaksham*), inference (*Anumanam*), and textual testimony **(***Shabdha)*. The Vedas were complemented by *Upavedas*, which included fields such as Ayurveda, Dhanurveda, Gandharva Veda, and Artha Veda. Ayurveda, for instance, wasn't solely focused on treating diseases but also on promoting longevity. Dhanurveda covered military sciences, Gandharva Veda included finance, and Artha Veda encompassed humanities and economics. Throughout the discussion, parallels between ancient knowledge systems and modern science were highlighted, underscoring the timeless relevance and depth of ancient Indian wisdom.

Dr. Upinder Dhar, Vice Chancellor, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore discussed the Indian understanding gadget, as mentioned within the National Education Policy- 2020, representing not just tradition but a way of understanding transfer. It encompassed the rich history of ancient Indian knowledge found in texts like the Vedas, Upanishads, and Up Vedas. The NEP- 2020 emphasized integrating this understanding into modern education to address societal challenges. This integration wasn't about blindly accepting ancient teachings but involved rigorous research to understand. It was about recognizing the systematic nature of Indian understanding systems, which included *Dhyana, Vijnana*, and *Jeevan Darshan*, developed through experience, observation, and analysis. Efforts were underway to establish research fellowships, create databases, and promote interdisciplinary research organizations to explore the vast knowledge preserved in Indian texts. This included traditional subjects like mathematics, astronomy, medicine, and also tribal knowledge and indigenous practices. Moreover, the policy emphasized introducing Indian understanding systems into school and higher education curricula. This involved mapping traditional subjects with modern disciplines, providing engaging courses, and offering firsthand experiences through student excursions to ancient sites. The

Ministry of Education established an Innovative Cell for Indian Knowledge Systems at AICTE, New Delhi to promote interdisciplinary research, preservation, and dissemination of Indian understanding systems. The goals included facilitating further research, coordinating interdisciplinary work, and integrating Indian understanding systems into mainstream education. Efforts were made to identify tourist destinations with historical and cultural significance, promote student tours for educational purposes, and establish Indian understanding system centers for research and education. More than 8000 higher education institutions adopted Indian understanding systems into their curriculum, and digitization efforts preserved 1.5 lakh books on the subject. Overall, NEP 2020 sought to harness the vast repository of ancient Indian knowledge to address modern challenges and preserve the heritage of learning systems for future generations

Prof. Saroj Sharma, Chairperson, National Institute for Open Schooling, Noida, Uttar Pradesh discussed the Indian festivals. She discussed that in past eras, Indian festivals, rituals, and traditions were deeply intertwined with the symbiotic relationship between nature and humanity. Practices such as worshiping the sun, rivers, and trees had scientific explanations rooted in seasonal changes, fostering a harmonious coexistence with the environment. Indian philosophy, characterized by diverse schools of thought such as Nyaya, Vaisheshika, Mimansa, Vedanta, Sankhya, and Yoga, delved into logic, metaphysics, ethics, and spiritual practices. These philosophies provided a comprehensive understanding of life and the universe. Ancient Indian knowledge systems comprised a vast array of disciplines, from the Vedas, Upanishads, and Puranas to texts on astronomy, mathematics, medicine, and economics. This rich repository of wisdom was passed down through generations. Despite the absence of modern technology, ancient Indian scholars made significant strides in fields such as astronomy, mathematics, medicine, and physical sciences. Ancient Indians made pioneering contributions to mathematics, including the invention of zero, numerical notations, algebra, geometry, and trigonometry. In summary, ancient India's intellectual heritage encompassed a diverse range of disciplines and reflected a profound reverence for knowledge, innovation, and harmony with nature. These timeless insights continue to inspire and enrich contemporary understanding across various fields of study.

Prof. Manabendra Dutta Choudhury, Department of Life Science and Bioinformatics, Assam University, Silchar primarily focused on the Indian Knowledge System concerning traditional medicine in relation to the question of sustainable development. The speaker talked about recognized traditional knowledge and unrecognized traditional knowledge ingrained in the cultural heritage of ethnic communities. He emphasized that the key to sustainable development based on traditional knowledge lies in translating intuitive and holistic knowledge into reductionist terms. Since Intellectual Property Rights (IPR) cannot adequately protect traditional knowledge, there was a need for an alternative legal framework. The necessity of National Biodiversity Authorities (NBAs) and State Biodiversity Boards (SBBs) to consult with Biodiversity Management Committees (BMCs) regarding the use of biological resources and associated knowledge within their jurisdiction was highlighted. Ethical considerations were discussed regarding the acknowledgment of traditional knowledge in medicine, emphasizing the importance of giving due respect and credit to the practitioners. It was asserted that traditional knowledge is a valuable asset that needs to be transformed into a global resource through scientific intervention, by safeguarding it within a legal and technical framework for sustainable development.

Prof. Ajay Singh Rathore, Vice Chancellor, Shyam University, Jaipur, Rajasthan discussed the concept of the Great Tradition, encompassing various aspects of society, including festivals, ancient civilizations, and religious texts. It discussed the challenges modern society faced, such as changes in traditional practices and the impact of technology on cultural norms. There was a concern about the decline in traditional values and its effect on spiritual education and mental health, leading to suicides among children. In 2020, a New Education Policy was introduced to address these conflicts and promote interdisciplinary education and skill development. The passage concluded by emphasizing the importance of interdisciplinary knowledge in adapting to changing environments and circumstances, particularly in India's pursuit of knowledge and economic growth through startups and employment opportunities. Traditionally, a student might have started their day by touching their parents' feet, but in modern times, the first thing many did was check their mobile phones. This shift indicated a significant change in spiritual education influenced by technology. There was a noticeable transformation

in how traditions were perceived, particularly in the respect shown towards gurus. This shift contributed to increased stress among children, even leading to tragic instances of suicide. The introduction of the 2020 education policy aimed to mitigate conflicts within traditions and foster interdisciplinary and multidisciplinary education based on students' interests. The emphasis on interdisciplinary knowledge underscored its immense value and utility in navigating changing circumstances and environments.

Prof. Rajendra Prasad Das, Vice Chancellor, Krishna Kanta Handiqui State Open University, Guwahati, Assam initiated his discussion with an exploration of the ancient educational practices where each teacher would impart relevant knowledge every day. These educators were regarded not merely as servants but as sevaks, guiding students not only in academic subjects but also in spiritual and moral development, emphasizing respect for elders and fostering holistic growth.It was emphasized that alongside curriculum development, greater attention should be directed towards the pedagogical methods employed to deliver the curriculum. Institutions were urged to design courses or modules integrating Indigenous perspectives across diverse disciplines such as history, anthropology, environmental studies, literature, and social sciences. These educational endeavors were to highlight Indigenous ways of understanding, sustainable practices, traditional ecological knowledge, and cultural resilience. In order to effectively implement these initiatives, universities were encouraged to provide faculty members with comprehensive training and resources to integrate Indigenous knowledge into their teaching methodologies. Furthermore, it was proposed that teachers should undergo proper training, equipped with the finest pedagogical tools, thereby benefiting the college or university while facilitating the transmission of the educational spirit from faculty to students

The President, AIU, Prof G D Sharma, Vice Chancellor, University of Science & Technology Meghalaya began his discussion with the existence of the Gurukul system in ancient times, where each Gurukul specialized based on available resources, utilizing them for the benefit of society. Ancient Indian education was centered on holistic development, encompassing not only cognitive but also moral, emotional, and spiritual growth. These Gurukuls played a pivotal role in identifying, narrating, discussing, and resolving societal issues. Matters that couldn't be resolved at the Gurukuls were often taken up by renowned centers of learning such as Nalanda and Taxila. It was noted that contemporary society is increasingly transitioning towards a modern way of life, marked by uniformity and a predominant focus on market orientation, thereby veering away from traditional knowledge systems. The speaker highlighted the presence of principles akin to Bloom's Taxonomy in ancient educational practices. In this regard, it was observed that ancient Indian education encompassed various stages of learning, commencing with the memorization of sacred texts and philosophical tenets. Understanding was fostered through a deep exploration of meanings and implications, while application was demonstrated through debates and practical exercises. Analytical skills were sharpened through the study of scriptures, and the evaluation involved discerning between different viewpoints. Moreover, creativity was actively encouraged through intellectual discourse and the generation of original insights within traditional frameworks. The integration of Indigenous knowledge into higher education curriculum was emphasized as not only enriching the educational experience for all students but also as a means to contribute to the revitalization and preservation of Indigenous cultures, languages, and knowledge systems. This process was deemed essential for fostering more equitable, sustainable, and culturally responsive educational systems.

The Valedictory Function featured a report by Dr. Monalisa B Deka followed by Valedictory Address by Prof. Rajendra Prasad Das, Vice Chancellor, Krishna Kanta Handiqui State Open University, Guwahati, Assam who attended as the Chief Guest. The President, AIU Prof. G D Sharma, Secretary General, AIU Dr. Pankaj Mittal, Joint Director, Dr. Amarendra Pani, and Dr. R K Sharma addressed the participants. The event concluded with a collective commitment to collaborate in bridging traditions and creating a more inclusive future, aligning with the vision of '*Ek Bharat Shresth Bharat*'.

❑

AIU Invites Proposals for Collaboration for Organizing

ANVESHAN- International Student Research Conventions—2024-25

Association of Indian Universities organizes the *Anveshan*-**Student Research Convention** every year to identify and nurture the young talents and budding researchers in Indian Universities. In these Conventions, Innovative Research Projects are invited from the students (Undergraduate to Ph. D level), and assessed by a group of experts of the field on a well-laid criteria. The best Research Projects are conferred with certificates and awards. The Projects are invited in the disciplines of *1) Basic Sciences & Applied Sciences, 2) Engineering and Technology, 3) Agriculture and allied fields, 4) Health Sciences and allied fields, 5) Social Sciences; Humanities; Commerce; Business Management; and Law, and 6) Interdisciplinary.* The Conventions are to be held at two levels i.e. **Zonal and International**. The duration of each convention is of two **days**. These events are to be conducted in the current Financial Year i.e. before **March 31, 2025**.

AIU invites proposals from member universities/institutions for hosting these Conventions in Four Zones - East, West, North South, and One International Level Convention. Interested Member universities/institutions may send their **Expression of Interest** (EoI) along with a proposal duly endorsed by the Head of the Institutions to AIU at the address given below:

Dr Amarendra Pani

Joint Director & Head (Res)

Association of Indian Universities

AIU House, 16 Comd. Indrajit Gupta Marg

New Delhi – 110 002

E-mail: *researchaiu@gmail.com*

The proposals are required to be submitted latest by May 15, 2024. The Event will be finalized on mutually convenient dates and terms and conditions laid down by AIU. For any further query please contact on 011-23230059, Extn-202, **E-mail:** *researchaiu@gmail.com*. The details can also be downloaded from AIU Website: *www.aiu.ac.in.*

N.B.: AIU is not a Funding Organization. All these events are AIU activities for which Collaboration from member Universities/Institutions is solicited. Primarily, the events will be conducted under the banner of AIU. The details of terms and conditions will be communicated on the selection of the Proposal

The proposal must be sent to AIU with the Approval /Endorsement of the Vice Chancellor/ Head of the Institution.

THESES OF THE MONTH

SCIENCE & TECHNOLOGY
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of Feb-March, 2024)

AGRICULTURAL & VETERINARY SCIENCES

Forestry

1. David, Camus D. **Assessment of Melia dubia Cav progenies of some candidate plus trees for salinity stress**. (Dr. N S Thakur), Department of Forestry, Navsari Agricultural University, Navsari.

Horticulture

1. Lalruatsangi, Esther. **Characterization of Hatkora (*Citrus macroptera* Mont) accessions for selection of superior genotypes from Mizoram**. (Prof. T K Hazarika), Department of Horticulture, Aromatics & Medicinal Plants, Mizoram University, Aizawl.

BIOLOGICAL SCIENCES

Biochemistry

1. Rajeshwari, K Venkata Naga. **Studies on polygalacturonase enzyme from *Aspergillus Niger strain* RA401**. (Prof. S Suma), Department of Biochemistry, Chaitanya (Deemed To Be University), Himayatnagar, Hyderabad.

Biotechnology

1. Pachuau, Lalawmpuii. **Clinicopathological and genomic mutational analysis of triple negative breast cancer in Mizo population**. (Prof. N Senthil Kumar), Department of Biotechnology, Mizoram University, Aizawl.

Genetics & Plant Breeding

1. Vivek Singh. **Genetic analysis for yield and its attributing traits in buckwheat (*Fagopyrum tataricum Gaertn*)**. (Dr. Gopal Katna), Department of Genetics and Plant Breeding, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Life Science

1. Agarwal, Sristi. **Preclinical pharmacokinetics and biomarkers profiling of *Trigonella foenum-graecum* in polycystic ovary syndrome induced rats**. (Dr. Rabi S Bhatta), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Dnyane, Pooja Avinash. **Towards the development of a systems pharmacology model for vitiligo**. (Dr. Chetan Gadgil), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Gupta, Rohit. **Understanding dermal-epidermal interactions during skin homeostasis and wound repair**. (Dr. Archana Singh), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

4. Kumar, Sreelekshmi S. **Role of angiogenesis and angiogenic modulators on browning of white adipocytes and its implication in obesity**. (Dr. M S Kiran), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

5. Kushwaha, Vinita Tribhuvan. **Molecular & therapeutics approaches to ameliorate HFD-induced metabolic disorders enriching beneficial gut microbiome: Immune-metabolic alteration in adipose tissue**. (Dr. Anil K Gaikwad), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

6. Nandwani, Arun. **Regulation of Mitochondria-Associated ER Membrane (MAM) proteins in liver by ncRNAs during type 2 diabetes**. (Dr. Malabika Datta), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

7. Rauthan, Riya. **Loss of ERBB4 perturbs the migration of cortical interneurons in human forebrain organoids**. (Dr. Debjyoti Chakroborty), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

8. Vyas, Akanksha. **Identification and characterization of Cancer Oocyte Antigen (GOA) SAS1B as potential biomarker for cervical cancer**. (Dr. Monika Sachdeva), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Marine Science

1. Kummari Suresh. **Surveillance for *Antibiotic Resistance* (ABR) in common pathogens in freshwater aquaculture farms in Kolleru Region of Andhra Pradesh, India**. (Dr. Devika Pillai), Department of Aquatic Animal Health Management, Kerala University of Fisheries and Ocean Studies, Kerala.

2. Raj, Bincy M. **Taxonomy and distribution of snake mackerels along the Southern Coast of India with special reference to the Biology of Rexea Bengalensis (Alcock,1894)**. (Dr. M K Sajeevan), Department of Fisheries Resource Management, Kerala University of Fisheries and Ocean Studies, Kerala.

3. Thomas, Liju. **Systematics of Chitons from the Indian Coast**. (Dr. Ranjeet K), Department of Aquatic Environment Management, Kerala University of Fisheries and Ocean Studies, Kerala.

Microbiology

1. Mendhe, Siddharth Nagorao. **Studies on seasonal growth variation, characterization, screeening as antibiotic producers and evaluation of phylogram of actinomycetes from saline water of lonar crater of Buldana District of Maharashtra**. (Dr. A M Garode), Department of Microbiology, Sant Gadge Baba Amravati University, Amravati.

Molecular Biology

1. Borah, Priyanka. **Inhibition approaches of amyloid-β and α synuclein amyloidogenic aggregation: An in-*silico* study**. (Dr. Venkata Satish Kumar Mattaparthi), Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur.

Zoology

1. Marak, Chuckles Ch. **Effect of methanolic extracts of *Cycas pectinata* (Buch.Ham) seed on testicular activity in mice**. (Dr. Vikas Kumar Roy), Department of Zoology, Mizoram University, Aizawl.

EARTH SYSTEM SCIENCES

Environmental Science

1. Borah, Parashmoni. **Spectral signatures in rainfall and its inter relationship with other meterological variables in North-East India**. (Dr. Amit Prakash), Department of Environmental Science, Tezpur University, Tezpur.

2. Gondwal, Tarang Kumar. **Characterization of road dust and its management**. (Dr. Papiya Mandai), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Zonunthari. **Seasonal monitoring of ground water quality in Aizawl City, Mizoram**. (Prof.P K Rai), Department of Environmental Science, Mizoram University, Aizawl.

ENGINEERING SCIENCES

Architecture

1. Jain, Priyanka. **Sustainable development framework inclusive of landscape elements: Study area Nainital**. (Prof.Minakshi Jain and Dr. Inderpal Singh), Department of Architecture, National Institute of Technology, Hamirpur.

Biochemical Engineering

1. Khatri, Shivani. **Understanding the role of soil microbiota in disease suppression under different farming practices**. (Prof. Shilpi Sharma), Department of Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi, New Delhi.

Biomedical Engineering

1. Rishabh, Bajpai. **Development of a comprehensive clinical decision support system for GAIT assessment in children with spastic cerebral palsy**. (Prof.Deepak Joshi), Department of Biomedical Engineering, Indian Institute of Technology Delhi, New Delhi.

2. Sikidar, Arnab. **Musculoskeletal modelling of human lower limb**. (Prof.DineshKalyansundaram), Department of Biomedical Engineering, Indian Institute of Technology Delhi, New Delhi.

Chemical Engineering

1. Chaudhary, Sagar Dattulal. **Catalytic conversion of carbon dioxide to value added chemicals**. (Dr. Nilesh Atmaram Mali), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Deulgaonkar, Prashant Sureshrao. **Theoretical and experimental investigation of process chromatography step for purification of monoclonal antibody therapeutic**. (Dr.Rahul Bhambhure), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Civil Engineering

1. Bakare, Mayuresh Dhanraj. **Field performance of flexible pavement constructed with copper and steel industry wastes in subbase layer**. (Prof. J T Sahu and Prof. Satyajit Patel), Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

2. Gayathri, VL. **Shear behaviour of frictionally anisotropic geotechnical interfaces: Snakeskin-inspired patterns**. (Prof.Prashantah), Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

3. Gupta, Durva. **An affordance framework to formalize the integrated design of built environment**. (Prof. J Uma Maheswari), Department

of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

4. Gupta, Tanmay. **Machine learning-enabled liquefaction hazard assessment of some Indian sandy soil deposits**. (Prof. G V Ramana and Prof.A W Elgamal), Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

5. Panda, Susmita. **Vibration control and mechanics-driven machine learning techniques for high speed railway bridges**. (Prof.Bappaditya Manna and Prof. Arnab Banerjee), Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi.

Computer Science & Engineering

1. Ali, Mohammad Afaq. **Big data analytics in smart city planning for performance and decision making through real time data processing**. (Prof. V K Panchal), Department of Computer Science & Engineering, Al-Falah University, Faridabad.

2. Patowary, Pallabi. **Disease biomarker identification for esophageal squamous cell carcinoma using gene expression data analysis**. (Prof. Dhruba Kumar Bhattacharyya), Department of Computer Science & Engineering, Tezpur University, Tezpur.

3. Tewari, Saurabh. **Optimizing neural networks performance on parallel architectures**. (Prof. Kolin Paul and Prof. Anshul Kumar), Department of Computer Science & Engineering, Indian Institute of Technology Delhi, New Delhi.

4. Yogendra Kumar. **Enhancing the performance of intrusion detection system frameworks using computational intelligence techniques**. (Dr. Vijay Kumar and Dr. Basant Subha), Department of Computer Science & Engineering, National Institute of Technology, Hamirpur.

Electrical & Electronics Engineering

1. Anchal, Sahil. **Person identificiation through footstep-based biometric recognition**. (Prof. Subrat Kar), Bharti School of Telecommunication Technology and Management, Indian Institute of Technology Delhi, New Delhi.

2. Dutta, Ayan Kumar. **Some studies on the time-variance of time-varying systems and the non-stationarity of the associated processes**. (Prof.S D Joshi), Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi.

3. Gupta, Jitendra. **Design and development of light electric vehicle chargers**. (Prof.Bhim Singh), Department of Electrical & Engineering, Indian Institute of Technology Delhi, New Delhi.

4. Khushboo Kumari. **Controlling of PV integrated grid-tied converters: Reduced DC-link capacitor and reduced sensors**. (Prof.Amit Kumar Jain), Department of Electrical & Engineering, Indian Institute of Technology Delhi, New Delhi.

5. Maheshwari, Ankur. **Multi-objective optimal operation of deregulated power sector incorporating renewable energy sources**. (Prof. Y R Sood and Dr. Supriya Jaiswal), Department of Electrical Engineering, National Institute of Technology, Hamirpur.

Food Science & Technology

1. Rohini, B. **Photocatalytic assisted valorization of corn cob biomass**. (Dr. H Umesh Hebbar), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Mechanical Engineering

1. Raina, Deepak. **Robotic sonographer: Robot learning ultrasound procedure skills from domain expertise**. (Prof.S K Saha), Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi.

2. Vibhanshu, Vipul. **Development of guidelines for design of TLUD cookstoves**. (Prof. Sangeeta Kohli and Prof. M R Ravi), Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi.

Metallurgical Engineering

1. Singla, Rashmi. **Study of structure-property correlations of inorganic-organic hybrid geopolymers**. (Dr. Sanjay Kumar), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Mineral Engineering

1. Baral, Bineeth. **Genomic sequence-based self-assembled branched DNA nanostructures for gene regulation**. (Dr. Umakanta Subudhi), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Rauf, S Abdul. **Development of micromixer for solvent extraction of metals**. (Dr. K Sanjay), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Structural Engineering

1. Gautham, S. **Nanoscale investigations on engineered cementitious composites using simulated and experimental grid nanoindentation technique**. (Dr. lng Saptarshi Sasmal), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Telecommunication Engineering

1. Gautam, Naveenta. **Leveraging machine learning for enhanced performance of optical and wireless communication systems**. (Prof.Brejesh Lall and Prof.Amol Choudhary), Bharti School of Telecommunication Technology and Management, Indian Institute of Technology Delhi, New Delhi.

2. Ruchita. **Study of select issues in the management of electric vehicles charging infrastructure in India**. (Prof. Ravi Shankar), Bharti School of Telecommunication Technology and Management, Indian Institute of Technology Delhi, New Delhi.

3. Singh, Anushikha. **Deep learning based framework for automated screening and medical assistance: Lung diseases from chest x-rays**. (Prof. Brejesh Lall and Prof. B K Panigrahi), Bharti School of Telecommunication Technology and Management, Indian Institute of Technology Delhi, New Delhi.

MEDICAL SCIENCES

Biotechnology

1. Sarma, Ranjan Jyoti. **Genetic variants in pharmacogenes in North-East Indian population and their association with adverse drug reaction in gastric cancer**. (Prof. N Senthil Kumar), Department of Biotechnology, Mizoram University, Aizawl.

Pharmaceutical Science

1. Bhadouriya, Anupam Singh . **Formulation and evaluation of Eugenol loaded PCL nanoemulsion gel for anti-inflammatory activity**. (Dr. Rajasekaran S), Department of Pharmacy, Bhagwant University, Ajmer.

2. Maury, Shashikant. **Development and performance evaluation of γ oryzanol loaded albumin nanoparticles for the treatment of cancer**. (Dr. Rajasekaran S), Department of Pharmacy, Tezpur University, Tezpur.

3. Patel, Vivek Kumar. **Formulation and characterization of Gamma oryzanol loaded chitosan nanoparticles**. (Dr. Rajasekaran S), Department of Pharmacy, Bhagwant University, Ajmer.

4. Swarup, J. **Comparative evalution of anti-inflammatory activity of green tea leaves and its herb-drug interaction study with Dmard's**. (Dr. Rajasekaran S), Department of Pharmacy, Bhagwant University, Ajmer.

5. Venkataramana, E. **Synthesis and charecterization of drug-loaded polymeric matrices encapsulated with nanoparticles for drug delivery and pharmaceutical applications**. (Prof. Naseem), Department of Pharmaceutical Chemistry, Telangana University, Nizamabad.

PHYSICAL SCIENCES

Chemistry

1. Bhushan, Anil. **Phytochemical investigation of Saussurea costus and Cocculus hirsutus and chemical modification of isolated bioactive compounds**. (Dr. Prasoon Kumar Gupta), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Boda, Sunitha. **Design and synthesis of some new indole derivatives as anticancer agents**. (Prof. M Ravinder), Department of Chemistry, Chaitanya (Deemed To Be University), Himayatnagar, Hyderabad.

3. Gogoi, Dipanta. **Computational probe of an alkylating prodrug: Temozolomide and its derivatives**. (Dr. Zodinpuia Pachuau), Department of Chemistry, Mizoram University, Aizawl.

4. Gouthami, D. **Synthesis and biological evaluation of novel quinoxaline and indole scaffolds and their molecular docking studies**. (Prof.M Ravinder), Department of Chemistry, Chaitanya (Deemed To Be University), Himayatnagar, Hyderabad.

5. Patwa, Nitika. **Bone morphogenetic protein 2 (BMP2): From cloning to purification, characterization, stability and interaction studies with its receptor**. (Prof.Shashank Deep), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.

6. Ranjan, Ravi. **Gas-solid interactions and its influence in electronic structure evolution and heterogenous catalysis**. (Dr. C S Gopinath), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

7. Saini, Parul. **Development of novel metal and non-metal catalysts for the sustainable synthesis of BIS (INDOLYL) methanes, C3 alkylated oxindoles, and benzonic acids**. (Prof. Anil J Elias), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.

8. Sanjay Singh. **Organocatalytic stereoselective C-C bond formation through desymmetrization, michael, and aldol condensation reactions**. (Pro Ravi P Singh), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.

9. Shukla, Jyoti. **Mannich cyclization between hydroxylactam and acetal: Application in the synthesis of izidine alkaloids**. (Dr. Dipankar Koley), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

10. Swain, Gitanjali. **Lactam based polymer semiconductors for electronic applications**. (Dr. K Krishnamoorthy), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

11. Vaishna, K Priya. **Metal-Organic Frameworks (MOFs) derived heteroatom-doped carbon for energy and environmental applications**. (Dr. Harish US), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

12. Verma, Ashutosh. **Development of transition metal catalysts for C-H bond functionalization of aryl ketones, sulfones and carboxamides**. (Prof.Anil J Elias), Department of Chemistry, Indian Institute of Technology Delhi, New Delhi.

Physics

1. Bhatt, Sunil. **High contrast label-free single shot quantitative phase imaging and spectroscoping techniques for biological applications**. (Prof.D S Mehta), Department of Physics, Indian Institute of Technology Delhi, New Delhi.

2. Laihnuna. **Optical and transport properties of selected binary and ternary semiconductor compounds**. (Prof.Zaithanzauva Pachuau), Department of Physics, Mizoram University, Aizawl.

3. Malik, Vikas. **Electrical transport studies on multiferroic metal organic framework**. (Prof. Ratnamala Chatterjee), Department of Physics, Indian Institute of Technology Delhi, New Delhi.

4. Naithani, Ravindra. **A study of weather impacted KU band satellite channel: Propagation impairment and improvement in quality of service in moist tropical climate**. (Prof.R C Tiwari), Department of Physics, Mizoram University, Aizawl.

5. Sharma, Shivani. **Telecom-band quantum photonic state preparation via dispersion engineering in SOI nanowaveguides**. (Prof.Joyee Ghosh and Prof. Vivek Venkataraman), Department of Physics, Indian Institute of Technology Delhi, New Delhi.

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SHRI BHUMIKA NURSING COLLEGE

Parye, Sattari, Goa

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E-Mail: shribhumikanursingcollegeparye@gmail.com Contact No: -8788198312

I. Applications are invited from eligible candidates for filling up the below mentioned teaching posts in Nursing on Contractual basis initially for the period of one year

Sr No.	Name of Posts	No. of Posts	Essential, Educational Qualification and Working Experience
1	PRINCIPAL cum PROFESSOR	1	M.Sc. (Nursing) having total 15years experience with M.Sc. (Nursing) out of which 10 years after M.Sc. (Nursing)) in collegiate program. Ph.D. (Nursing) is desirable.
2	PROFESSOR	1	M.Sc. (Nursing) having total 12 years experience with M.Sc. (Nursing) out of which 10 years teaching experience after M.Sc. (Nursing). Ph.D. (Nursing) is desirable
3	ASSOCIATE PROFESSOR	2 Medical Surgical Nursing -1 Pediatric Nursing –1	M.Sc. (Nursing) having total 8 years experience with M.Sc. (Nursing)including 5 years teaching experience. Ph.D. (Nursing) is desirable.
4	ASSISTANT PROFESSOR	3 Medical Surgical Nursing –1 Community Health Nursing 1 Psychiatric Nursing –1	M.Sc. (Nursing) with total 3 years teaching experience.Ph.D. (Nursing) is desirable.
5	TUTOR	22	M.Sc. (Nursing) preferable, B.Sc. (Nursing)/ P.B.B.Sc. (Nursing) with1 year experience for B.Sc. Nursing Programme. M.Sc. (Nursing) or B.Sc. (Nursing)/ P.B.B.Sc. (Nursing) or Diploma in Nursing Education and Administration with 2 years of professional experience for GNM Programme.

For all the above Posts:
- Applicants should compulsorily produce valid 15 years Residence Certificate in Goa. Knowledge of Konkani is essential.Knowledge of Marathi is desirable
- Age limit shall not exceed 45 years for Assistant Professor and tutor posts.
- Age limit shall not exceed 50 years for Principal, Professor and Associate Professor posts.
- Attractive salary as per norms based on experience & credentials of teachers.
- Applications for the above posts stating full name, address, age with date of birth, SSC Marksheet, HSSC marksheet, professional educational qualification with marks & percentage, experience. Along with certified photocopies of Qualification certificates, Experience certificates, Valid employment card, Birth certificate and other relevant certificate issued by competent Authorities, shall reach office Email: **shribhumikanursingcollegeparye@gmail.com** before closing hours on 25th May 2024. Candidates already employed should forward their application through proper channel.

II. Applications are invited from eligible candidates for post in the teaching for non-nursing courses (Part-time/ external faculty**) for the following discipline in B.Sc. Nursing / GNM programme.

Sr. No.	Name of Posts	Nature of Posts	Number of Post
1	ASSISTANT PROFESSOR IN ENGLISH	Lecturer	1
2	ASSISTANT PROFESSOR IN ANATOMY	Lecturer	1
3	ASSISTANT PROFESSOR IN PHYSIOLOGY	Lecturer	1
4	ASSISTANT PROFESSOR IN SOCIOLOGY	Lecturer	1
5	ASSISTANT PROFESSOR IN PSYCHOLOGY	Lecturer	1
6	ASSISTANT PROFESSOR IN BIOCHEMISTRY	Lecturer	1
7	ASSISTANT PROFESSOR IN NUTRITION AND DIETETICS	Lecturer	1
8	ASSISTANT PROFESSOR IN HEALTH INFORMATICS	Lecturer	1
9	ASSISTANT PROFESSOR IN MICROBIOLOGY	Lecturer	1
10	ASSISTANT PROFESSOR IN PHARMACOLOGY	Lecturer	1
11	ASSISTANT PROFESSOR IN PATHOLOGY	Lecturer	1
12	ASSISTANT PROFESSOR IN GENETICS	Lecturer	1
13	ASSISTANT PROFESSOR IN PHYSICAL EDUCATION	Lecturer	1

**The above teachers should have postgraduate qualification with teaching experience in respective discipline. For all the above Lecturer Posts: -

Applicants should compulsorily produce valid 15 years Residence Certificate in Goa. Knowledge of Konkani is essential. Knowledge of Marathi is desirable.

Application for above mentioned lecturer posts should reach the office Email: **shribhumikanursingcollegeparye@gmail.com** on or before **25th May, 2024** by 1.00 PM.

Chairman/Principal