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One Nation One Subscription (ONOS): Perspectives and Prospective

J N Gautam* and Rajesh Kumar Pandey**

Science, Technology, and Innovation Policy-2020 (STIP 2020), in its draft report to the Government of India, recognized the essence of universal and equitable access to academic and scholarly content. A resurgence in research and innovation can potentially ensure a self-reliant India (*Atmanirbhar Bharat*), and it requires, besides others, access to quality scholarly journals for the academic, research, and scientific community across the country mandatorily. Having realised this essence, STIP 2020 has envisioned the One Nation One Subscription (ONOS) plan. The draft report states, "The Government of India will negotiate with journal publishers for a "one nation, one subscription" policy whereby, in return for one centrally negotiated payment, all individuals in India will have access to journal articles. This will replace individual, institutional journal subscriptions."

Based on the recommendations of the Principal Scientific Adviser to the Government of India, the Department of Higher Education under the Ministry of Education has notified a circular on 15th November 2022 concerning the implementation of ONOS at all the centrally funded technical institutions, research institutions, and institutions of higher learning (Govt. of India Department of Higher Education, 2022). The policy envisages signing a single national license with all the prominent publishers across the globe to ensure access to all national and international journals to all the CFTIs, research institutions, universities, and colleges, incorporating every citizen of the country in a phased manner. Under 1st phase of the ONOS that would be in force from 1st April 2023, access to the contents of seventy prominent publishers of the world, given in the annexure to the said order, would be provided. It was officially notified on dated August 3, 2022, by the Principal Scientific Adviser to the Government of India that a Planning and Execution Committee (PEC) consisting of seventeen members would identify and finalise the e-resources from the Sciences, Technology, Engineering, Medical Sciences, Social Sciences, Arts & Humanities disciplines, and other specific demand-based resources. A Cost Negotiation Committee (CNC) would finalise the rate of the subscriptions for nationwide access to scholarly content.

ONOS is a very bold initiative, perhaps, the first of its kind, especially at such a large scale. It is unprecedented and highly commendable to make India an actual knowledge economy, ensuring access to academic content to all enlightened citizens, be they

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academic, scientific, research, or ordinary citizen. Its sustainability and success would add a new feather to India's progress in the field of Science, Technology, Innovation, Social Sciences, and other knowledge domains. Mallapaty (2020) has quoted Peter Suber, Director of Harvard Office for Scholarly Communication, Cambridge, Massachusetts, "If India could do it and make it cheaper, many countries will be interested,". India could lead the world to a universal model of access to scholarly knowledge without boundaries. A replica of such a model is already in force in some countries, namely Uruguay (Portal Timbo), Egypt (EKB-Egyptian Knowledge Bank), and South Africa, but supported by the World Bank (Sinha, 2020; Rathinasabapathy & Veeranjanyulu, 2022). While in Germany, under a national journal access plan, research institutions collectively pay the subscription amount to the publishers, ensuring access to academic content to all its academia and ordinary citizen. However, a national subscription model like ONOS, estimated to cover a billion-plus population later, is of first of its kind in the world where the government would support the whole subscription amount for all its citizens.

Why ONOS

The ethos of this ambitious and mammoth plan is to save money by ensuring a unified and single subscription at the national level by eliminating the possibility of unnecessary duplicate subscriptions. The dedicated fund would be further utilised to support the academic and scientific community assisting them concerning Article Processing Charges (APCs) and thereby promoting the availability of scholarly content in the Open Access domain.

The quality of research has been a concern at large among the institutions of higher learning in India, and inaccessibility to scholarly content by the research community was considered a significant impediment in this context. The overall research productivity of India's HEIs and research institutions was deficient at the global level compared to the other developed and developing countries. A few institutions made a significant chunk of contributions to research productivity at the national level in a better position concerning availability and access to international peer-reviewed scholarly journals and other resources. Post-conceptualization and implementation of the consortia subscription model to journals and databases led to a new dawn of

access to scholarly content, eventually increasing the national research output. India stood 4th in rank in 2021 globally regarding the number of research papers published, as reflected in the Scopus database (Rathinasabapathy & Veeranjanyulu, 2022).

Universality & Equitability

ONOS has a more considerable inherent characteristic of maintaining the democratic distribution of scholarly content to all the taxpayers of the country, fulfilling the objectives of the Sustainable Development Goals (SDG) of the United Nations. Equitable access to scholarly knowledge has been a concern in India, and it often compels the academic community to adopt unethical means of downloading research papers from unsolicited/pirated websites like Sci-Hub, etc. It has been reported that, on average, 39,952 articles are downloaded daily (Singh,2021; Owens,2021). Through this national subscription plan, the Government of India has been trying to mitigate such hindrances to access to knowledge. It is beyond doubt that access to knowledge would, perhaps, further result in producing new and innovative expertise with far-reaching socio-economic and socio-political implications across the country.

Expected Saving in ONOS

The scheme seems to be undertaken keeping in view the financial perspectives and national interest. On one end, access to quality academic content would be ensured to every citizen in a phased manner, and on the other judicious use of funds would be provided to further the knowledge through OA. It has been reported that around INR 1500 crores (\$200-205 million) is incurred per annum towards the subscription of research journals in India (Mallapaty,2020; Sinha,2020). This subscription amount is paid by the research institutions, universities, and others that receive such grants directly or indirectly from the government. The institutions must negotiate to fix the subscription amount to ensure access to quality journals. The amount would vary from institution to institution, and its details are never shared with others because of the rider of terms and conditions of maintaining confidentiality. Further, many institutions have reported duplicate subscriptions of several common resources, leading to unnecessary expenditure rather than wastage of taxpayers' money. Though the consortium was there to mitigate

such duplicity, the question of unfettered access to scholarly content remains unanswered. The ONOS, as it claims, would address both issues - one to save unnecessary expenditure on multiple subscriptions of common academic resources amongst research institutions and institutions of higher learning, thereby saving a reasonable amount, and the other to make India an 'Equitable Knowledge Society (EKS) through 'Universal Access to Knowledge' (UAK).

Underneath Issues

No doubt ONOS has a sound proposition, but several concerns are embedded underneath this model that needs to be consistently addressed and monitored, failing which it will not be possible to sustain this ambitious plan for a longer time.

Funding

India has many academic institutions, research organizations, and others in both the public and private sectors. AISHE (2019-20) reports the existence of more than fifty-five thousand (55,000) institutions in the domain of higher education consisting of 1043 universities, 42343 colleges, and 11779 stand-alone institutions, including both public and private.

As the ONOS envisaged a single national subscription, it must consider all such institutions in both phases. There is a direct correlation between the number of access points/users and the journal/database/resources subscription cost. More significant the need for access, the bigger the license fee/subscription fees. The publisher initially visualizing a big market in India may agree to a considerable/negotiable subscription cost. Still, there could be a possibility of rising annual subscription costs in the range of 10 to 20 percent or more after one or two years of the initial agreement, citing the rising cost of publications, inflations, and other factors. It is, therefore, a point of contention how the issues of centralised funding for such a large-scale subscription would be successfully managed for a long time without any glitches, how the central government would ensure contributions/sharing of funds from the state governments, as most colleges and universities in India are in the domain of state government, private institutions, etc., as the central govt alone could not carry on such a mammoth plan for an unlimited period single-handedly. However, if the government of India could manage and take the burden of the whole expenditure on itself, then there

is a greater probability of success of the ONOS. A slight deviation in the budget allocation or scarcity may severely affect the whole implementation saga of ONOS. Therefore, a fool-proof mechanism involving all the concerned stakeholders must evolve in this direction to ensure the plan's sustainability.

Identification of Common Resources

A consistent and heavily engaged process for identifying the institutions' required resources must be in place to address their specific and demand-based resources. As the demand for resources might be dynamic, a continuous collaborative venture must be there with a high level of coordination between the institutions, community, and a centralised nodal agency, perhaps the INFLIBNET. The role of the Planning and Executive Committee, together with the Core Committee, is significant concerning identification, finalisation, and negotiations.

Monitoring and Evaluation

This is another area of concern and of utmost significance for a centralised system of subscriptions. Institutions and people extensively use different networks with different IP addresses, and merely depending upon the publishers for usage data would incline the post in their favour and subsequently escalate the subscription cost in the forthcoming year. A robust mechanism needs to be evolved and designed for the consistent and periodic evaluation of the usage of the resources. A little deviation may result in loss to the exchequer and wastage of resources. Here, the role of the libraries is paramount, and they must be taken on board.

Access Management

Terms of reference for the Planning and Execution Committee refer to issues such as archival access, retaining or transfer of copyright of articles to be made available in the open access domain. The government of India, while negotiating with the publishers, must emphasise compulsorily retaining the copy of the journal in its centralised server/digital repository for archival purposes and bargain hard with the publishers to get them to agree to provide perpetual access to the journals till the subscription period is maintained. This would safeguard the national interest and ensure uninterrupted access to all the subscribed academic content by the ordinary citizen of the country, including all.

Infrastructure Requirement

The government envisions ensuring access to knowledge for every country's citizen in the 2nd phase of the ONOS. A fair implementation would promote scholarship and a knowledge-rich society. However, universal access to information requires a robust digital infrastructure. Efforts are being made under the 'Digital Initiative Programme' to strengthen the accessibility of information and communication technology to every citizen of India to mitigate the digital divide, especially between urban and rural populations. SDG India Index 2020-21(NITI Aayog, 2021) indicates that only 55 people out of 100 population have access to the internet. Network connectivity, bandwidth availability, speed of the internet, availability of smart devices, etc., are other issues that need to be addressed expeditiously to make ONOS successful in the long run.

OA and APCs

Under ONOS policy, the central government would pay the publishers for their paywalled journals and Article Process Charges on behalf of the authors to make their papers available in the open-access domain. In addition to subscriptions to paywalled journals, India spends an average of 985 crores (\$134.5 million) on publishing papers in Open Access Journal or Hybrid OA journals (Sinha,2020). While there has been advocacy for making all research papers in the open access platform, provided they are the result of a publicly funded project, the provision embedded in the ONOS varies considerably from this discussion. The government could make a balance while negotiating with the publishers in this regard for their paywalled journals and may convince them to make such papers in open access domain for the benefit of society without charging APCs separately. There have been distinct views in some quarters concerning the provision of the ONOS plan to extend financial support to research and the scientific community out of taxpayers' money in terms of Article Processing Charges (APCs). While it is supposed to boost the morale of such a community, others consider it is unnecessarily meeting the publishers' commercial interests. The best feasible solution is not to pay additional APCs for the paywalled journals for which the government pays the subscription. It will be detrimental if the researchers and scientific community must pay separately to the publishers for making their papers

accessible to all in the OA domain. A continuous discussion among the various stakeholders and a fruitful bargain with the publishers could create a balance. The volume of scientific literature being contributed by India globally has the sufficient bargaining power to prepare the global publishers to come on board.

Research Culture

The success of any plan depends upon multiple factors. India has succeeded in substantially producing scientific literature, but most of such research output stems from very limited research institutes and universities (Gupta & Dhawan,2009; Krishna & Patra,2016). Merely providing access to resources would not help in fulfilling the true spirit of this ONOS. A breeding culture of research must be infested in the minds of the students and teachers across educational institutions. Otherwise, the goal of optimum utilisation of scholarly resources will always remain a distant dream.

Conclusions

Scientific research and innovation lead to the generation of knowledge and has the potential for fundamental transformation. India strives to become the most significant global knowledge economy and must invest substantially in research and innovation practices. India's contribution to the world in terms of scientific and research output has been commendable and enhancing rapidly over the years, as is visible in the Scopus and Web of Science, with the post introduction of many measures. The 'Scimago Journal and Country Rank' portal, supported by Scopus, reflects that during the last five years (2017 to 2021), there has been an increase of around 49.8 per cent in the total scientific research output. As per the portal, while India produced 158494 scientific papers in 2017, the numbers got enhanced to 237429 in 2021. ONOS is a unique path-breaking plan of the Government of India that has the potential to transform India into a knowledge-based society subject to maintaining a regular robust, and rigorous process with due diligence. The extent of cooperation and coordination among the institutions, government, and people would ultimately decide the fate of such a vast plan. Further, the success of ONOS would ultimately depend upon the global publishers' willingness to be part of the ONOS and how smartly the PEC, Core Committee, and the

government could manage the business/commercial interest of the publishers.

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HANDBOOK ON ENGINEERING EDUCATION (2016)

The 12th Edition of “**Handbook on Engineering Education**” is primarily meant for students seeking admission to Engineering/Technology/Architecture programmes at the undergraduate and postgraduate levels. It contains State-wise information on 1050 colleges/institutes/ university departments in the country. The information of Institutions in the Handbook includes: Year of establishment of Institute/ Department/ name of its Principal/ Director; probable date of Notification/last date of application; Number of seats available in each Engineering/ Technology branch; seats for NRIs/Foreign students; Eligibility; Application procedure; State-wise Common Entrance Test Rules for B.E/B.Tech/B.Arch courses; Fees; Hostel facilities, etc. Also given is ‘Faculty strength’, commencement of Academic Session, and System of Examination. Brief details of Post-graduate courses are also included.

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Educational Empowerment through 5G Internet Technology

Ajay Kumar Gupta*

The internet is one of the fastest-growing fields in computer science and has now become the backbone for the development of any nation or individual. Almost every other field, be it economic, social, defense, agriculture, employment, and so on, is now all directly linked with the evolution of internet technology and its fast and uninterrupted availability. The easy and low-cost availability of worldwide internet connectivity has drastically changed our lives and has given us countless opportunities for growth. Increasing connectivity through the internet has broken the physical barriers that previously existed in acquiring and sharing knowledge. The Government of India has also been taking all possible initiatives to provide home-developed and operational technology for every citizen. Towards this direction, it has taken numerous steps such as the launching of the National Education Policy, National Policy of Electronics, BharatNet, National Telecommunication Policy 2022, and so on. Opincariu, M [4] discussed the new possibilities of adding emerging technologies like 5G and AI to eLearning platforms. In this article, we will focus on the evolution of Internet technology and its applications with special reference to the educational scenario.

New Education Policy 2020 was launched on July 29, 2019, by the Govt. of India to meet the modern demands of the 21st century with the motto “*Equitable and Inclusive Education*”, which assures that no child should be denied access to a quality education because of their socio-cultural backgrounds. Its aim is to make India a “global knowledge superpower”. The salient features of the NEP as given in [7] are listed below:

- i. Ensuring Universal Access at All Levels of schooling from pre-primary school to Grade 12.
- ii. Ensuring quality early childhood care and education for all children between 3-6 years.

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- iii. New Curricular and Pedagogical Structure (5+3+3+4).
- iv. No hard separations between arts and sciences, between curricular and extracurricular activities, and between vocational and academic streams.
- v. Establishing National Mission on Foundational Literacy and Numeracy.
- vi. Emphasis on promoting multilingualism and Indian languages; The medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother tongue/local language/regional language.
- vii. Assessment reforms - Board Exams on up to two occasions during any given school year, one main examination and one for improvement, if desired.
- viii. Setting up of a new National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development).
- ix. Equitable and inclusive education - Special emphasis is given to Socially and Economically Disadvantaged Groups (SEDGs).
- x. A separate Gender Inclusion fund and Special Education Zones for disadvantaged regions and groups.
- xi. Robust and transparent processes for recruitment of teachers and merit-based performance.
- xii. Ensuring availability of all resources through school complexes and clusters.
- xiii. Setting up of State School Standards Authority (SSSA).
- xiv. Exposure to vocational education in school and higher education system.
- xv. Increasing GER in higher education to 50%.
- xvi. Holistic and Multidisciplinary Education with multiple entry/exit options.
- xvii. NTA to offer Common Entrance Exam for Admission to HEI.

- xviii. Establishment of Academic Bank of Credit.
- xix. Setting up of Multidisciplinary Education and Research Universities (MERUs);
- xx. Setting up of National Research Foundation (NRF).
- xxi. 'Light but Tight' regulation.
- xxii. Single overarching umbrella body for the promotion of the higher education sector including teacher education and excluding medical and legal education-the Higher Education Commission of India (HECI)-with independent bodies for standard setting- the General Education Council; funding-Higher Education Grants Council (HEGC); accreditation- National Accreditation Council (NAC); and regulation- National Higher Education Regulatory Council (NHERC).
- xxiii. Expansion of open and distance learning to increase Gross Enrolment Ratio (GER).
- xxiv. Internationalization of Education
- xxv. Professional Education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities, or institutions in these or other fields, will aim to become multi-disciplinary institutions.
- xxvi. Teacher Education - 4-year integrated stage-specific, subject-specific Bachelor of Education
- xxvii. Establishing a National Mission for Mentoring.
- xxviii. Creation of an autonomous body, the National Educational Technology Forum (NETF) to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, and administration. Appropriate integration of technology into all levels of education.
- xxix. Achieving 100% youth and adult literacy.
- xxx. Multiple mechanisms with checks and balances will combat and stop the commercialization of higher education.
- xxxi. All education institutions will be held to similar standards of audit and disclosure as a 'not-for-profit' entity.
- xxxii. The Centre and the States will work together to increase public investment in the Education sector to reach 6% of GDP at the earliest.

xxxiii. Strengthening of the Central Advisory Board of Education to ensure coordination to bring overall focus on quality education.

National Policy on Electronics 2019

The Government of India implemented the National Policy on Electronics in 2019, which became an important pillar of the "Make in India" and "Digital India" programmes the government. The objectives of the policy are listed below [8]. Besides manufacturing and export of electronic gadgets, the development of 5G Infrastructure, IoT, AI, Robotics, Drone, etc. are also included in the NPE 2019.

- Promote domestic manufacturing and export in the entire value-chain of ESDM for economic development to achieve a turnover of USD 400 billion (approx INR 26,00,000 crore) by 2025. This will include targeted production of 1.0 billion (100 crore) mobile handsets by 2025, valued at USD 190 billion (approx INR 13,00,000 crore), including 600 million (60 crore) mobile handsets valued at USD 110 billion (approx INR 7,00,000 crore) for export.
- Improve ease-of-doing Business for the ESDM industry.
- Encourage industry-led R&D and innovation in all sub-sectors of electronics.
- Promote and create a framework for a comprehensive Start-up ecosystem in emerging technology areas such as 5G, IoT, Artificial Intelligence, Machine Learning, Drones, Robotics, Additive Manufacturing, Photonics, Nano-based devices etc., and their applications in areas such as defense, agriculture, health, cyber security, smart cities and automation, with special focus on solving real-life problems.
- Provide incentives and support for significantly enhancing the availability of skilled manpower, including re-shilling, in the ESDM sector.
- Provide fiscal incentives and support for export-led growth, including significantly enhancing economies of scale in electronics manufacturing.
- Develop core competencies in all the sub-sectors of electronics, including inter-alia electronic components, sub-assemblies and semiconductors, telecommunication and broadcasting equipment, IT hardware, medical electronics. defense and

strategic electronics, automotive electronics, industrial electronics, consumer electronics, etc., and fables chip design. Become a global leader in the Electronics Manufacturing Services (EMS) segment by promoting progressively higher value addition in manufacturing of electronic products.

- Provide policy support and a special package of incentives for highly capital intensive projects.
- Drive indigenization in the microchips used by strategic and critical infrastructure sectors viz., defense, space, atomic Energy, telecommunications, broadcasting, aviation, power, etc., through design and production of such microchips.
- Create specialized governance structures within the Government to cater to the specific needs of the ESDM sector, in view of fast changes in technology and business models.
- Facilitate loans to the industry at competitive rates for setting up or expansion of electronics manufacturing units.
- Promote research, innovation, and support to the industry in the areas of packaging, interconnect, and micro photonics, as a long-term measure to counter the problems posed by the continued use of Silicon. like the limit of scaling and dark Silicon.
- Encourage and incentivize Transfer of Technology (ToT) for core technologies.
- Promote research, innovation, and support to industry for green processes and sustainable e-Waste management, including *inter-alia* facilitation of citizen engagement programmes for safe disposal of e-Waste in an environment-friendly manner, development of e-Waste recycling industry and adoption of best practices in e-Waste management.

BharatNet Project

The BharatNet project was originally launched in 2011 as the National Optical Fiber Network (NOFN), which was later renamed to BharatNet in 2015. The objective of the project was to provide connectivity to 2.5 lakhs Gram Panchayats through optical fiber technology to provide 100 Mbps speed. This network was to be used to facilitate the delivery of e-governance, e-health, e-education,

e-banking, Internet, and other online services to the rural parts of India. The majority of the Gram Panchayats now have optical fiber connectivity and the government is working towards making the same available to all.

Indian Telecommunication Bill 2022

Keeping in mind the significant transformations taking place in the telecommunication world, the Government of India has proposed Indian Telecommunication Bill 2022 which will come into effect soon. The bill covers all the legal as well as the social aspects of telecommunication services. The details of the draft bill are given on the Ministry Website [9].

Internet Evolution

Origin of the Internet

The ARPANET (Advanced Research Projects Agency Network) is considered to be the inception of the internet, which was developed and used for communication purposes by the US Department of Defense during 1969-1989. The Department initiated the development of the Advanced Research Projects Agency Network (ARPANET) in the late 1960s with the initial objective to link the computers at Pentagon-funded research institutions over telephone lines. This network was the first wide-area packet-switched network with distributed control and one of the first networks to implement the TCP/IP protocol suite. Both technologies became the technical foundation of the Internet.

Evolution of Internet Technology

The journey of the internet began with this need for data transfer between a few devices connected via the ARPANET and it slowly grew into the huge interconnection of multiple types of devices located all over the world that we know today. With this growth, the underlying technologies that it is based on have also come a long way, and today we are talking about the powerful era of the 5th and 6th Generation of the Internet. Speed, bandwidth, technology, and access have all been tremendously upgraded from one generation to the next. Gayathri, M [1] presented a study about the comparison of various generations of mobile communication. Nikhil Bhandari [3] Vignesh, C.R. [6], and many others discussed the technological upgradation from 1G to 5G evolution.

First Generation

It was deployed around 1980 having communication technology in form of Analog signals. The access system was Frequency Division Multiple Access (FDMA) to facilitate voice calls only. The speed in this generation was around 2.4 kbps. Drop call and poor quality of voice was the major drawback observed during this era.

Second Generation

It was deployed around 1990 having communication technology in form of digital signals. The access system was Time Division Multiple Access (TDMA), and Code Division Multiple Access (CDMA). The extended applications during this duration were SMS, Multimedia features, voice calls, and SIM features introduced in this time span. Speed was also increased up to 64 kbps.

Third Generation

It was deployed around 2004 having communication technology in form of digital signals. The access system was WCDMA. The extended applications during this duration were Video Conferencing, and GPS (Triangulation technique) in addition to features available with the second generation. The speed was also increased to up to 2 Mbps.

Fourth Generation

It was deployed in around 2009 having communication technology in form of digital signals. The access system was WCDMA. The extended applications during this duration were wearable devices, Mobile TVs, and High-speed applications in addition to features available with the third generation. The speed was also increased to up to 1 Gbps. The latency was observed at 10-100 ms with 10^5 subscribers per sq. km.

Fifth Generation

It was deployed in around 2019 having communication technology as MIMO (Multiple Input Multiple Output), mm Waves. Orthogonal Frequency Division Multiple Access (OFDM), Band Division Multiple Access (BDMA). The extended applications during this duration would be Self-driving cars, connected cars, Virtual reality, Augmented reality, Telemedicine (The future of medical procedures done remotely), Robotics,

Remote controlled vehicles, and High-resolution video streaming in addition to features available with the fourth generation. The speed will be available more than 1 Gbps and up to 10 Gbps. The latency will be 1 ms with 10^6 subscribers per sq. km.

5G Internet Evolution in India

The 5G internet technology has officially been launched in India by the Hon'ble Prime Minister on October 1, 2022, in 13 cities initially, viz. Delhi, Gurugram, Bengaluru, Kolkata, Chandigarh, Jamnagar, Ahmedabad, Chennai, Hyderabad, Lucknow, Pune, and Gandhinagar. Hon'ble Minister of Telecom has assured the availability of 5G Internet in over 200 Indian cities within the next six months and up to 80-90 percent of the country in the next 2 years. Reliance Jio, BSNL, and Vodafone Idea (Vi) will be providing 5G services in India and will gradually upgrade the technology and infrastructure to provide high-speed internet connectivity and minimize costs as much as possible. The technology behind 5G is provided in the book by Jonathan [2].

Challenges Faced by the 5G Architecture

To get the optimum speed and full potential offered under 5G technology, the setup of around 15 lakhs optical fiberized Base Transceiver Station (BTS) towers and time-bound upgradation of 5G compatible infrastructure are required in the next 3-5 years. Besides the ground infrastructure, trained manpower is also required to make it operational and to ensure the availability of uninterrupted service. To meet such requirements, a huge Capex is mandatory. Another challenge would be an unknown impact on human beings and biodiversity on the full implementation of 5G services.

Benefits of 5G Technology in the field of Social, and Economic Sectors

Revolution in High-speed Mobile Network

The new technology will be able to support up to 10 GBPS download speed, which means the transfer of voice, multimedia, and data can be done in a very short span of time. The latency can be reduced to less than a millisecond, which will provide a real-time operational experience in all applications. 5G networks will enable secure access to cloud storage and access to enterprise applications in a very efficient way. The revolution in 5G technology will boost the manufacturing

sector to produce compatible devices and equipment with huge employment opportunities. Panagiotis [5] discussed the evolution of wireless mobile networks and the future of 5G mobile technology for Technium Sustainability.

Gaming, Multimedia, and Entertainment

The uninterrupted availability and the quality of gaming, multimedia, and entertainment content is dependent on high-speed streaming without latency. The networks using the new technology will be able to receive live and cloud-stored data and information even on mobile devices in high quality and without any interruption. The gaming and entertainment industry will thus enjoy huge benefits and growth opportunities with the spread of the 5G wireless network. This will also possibly support augmented reality and virtual reality applications to the end users due to increased data transfer capacity.

Internet of Things – Connecting Everything

Internet of Things (IoT) is one of the most popular currently emerging fields and with the accessibility provided by 5G services to all devices, the appliances will be able to connect to the internet more easily which enhances the control in the hands of the owner/user. IoT requires 5G/6G services because it requires a lot of data collection, processing, and transmission to control millions of devices and sensors. This will not only facilitate in transforming the user into a “smart user”, but also provide great opportunities for the business and industries to grow and open up new avenues of research and production. Some applications of IoTs are given below:

Smart Home

In the future, almost all the devices in any home may be controlled over the wireless network. Almost every home will be a smart home and every user a smart one.

Logistic and Shipping

Logistics, shipping, and transport are the backbone of all economic activities of the nation. The availability of 5G will help the logistics and shipping industries with efficient and real-time support in tracking, fleet management, delivery, and more.

Healthcare Applications

AR/VR applications of 5G technology will

provide unparalleled support to medical practitioners by helping them perform instructive and consultation activities interactively and without any jurisdictional barriers. Students undergoing medical training will also get better exposure and people can get expert opinions much more easily to speed up diagnosis and treatment planning.

Drone Technology

Drones are becoming an indispensable tool in not just defense, but in many other industries which span social, business, monitoring, and security applications. With the advent and wide availability of 5G, drones can provide their services more efficiently and without any delay. Apart from the above, IoT technology and countless other potential applications. Some other examples are given below:

- Satellite Internet Facility
- Smart Farming and Agriculture
- Car Automation
- Driverless Car
- Smart Cities Planning and Implementation

Almost all types of Industries will be benefited from the technology.

Metaverse

This will advance the Internet to its next level, most probably within the next ten years. Metaverse words can be divided into Meta and Verse. Meta is a Greek word, which means “After” or “Beyond” and the Verse word came from the Universe. Metaverse means entering from one universe to another adopting AR and VR technology. Originally author Neil Stephenson introduced this concept in his popular novel “Snow Crash”, which became the foundation of Metaverse technology. Many companies have now started to work to create Metaverse. Mark Zuckerberg, Co-founder of Facebook changed the name of Facebook to Meta at the Connect 2021 Conference. Some other companies also initiated projects on Metaverse like Epic Games as an unreal engine, Microsoft as Project Mesh, and Google as Project Starline. In the next few years use of the internet will be totally transformed into the metaverse, this technology will be available for gaming, traveling, meeting, education, digital shopping, and many more areas. In India, the first marriage took place in Metaverse on 6th February 2022, where the

bride-groom and guests were present virtually in the ceremony.

Soon the availability of 5G/6G internet speed will facilitate a new scenario of teaching and learning in the Metaverse, which will give the feeling of an actual classroom to the teacher and co-learners. AR/VR headset with Metaverse service provider will be required to create such an AR and VR mixed environment. One can easily feel and learn history, science, and another subject by entering such an environment.

The teaching and learning environment is going to be revolutionized with the integration of Metaverse technology.

Use of 5G Services with NEP

Part III of NEP 2020 describes elements related to the use and integration of technology in education, including the availability of online and digital education ensuring more equitable use of technology.

In the new educational scenario, a student should not be bound to complete their education in the traditional manner. They should be free to opt for a multi-dimensional education, including the option to pursue education online. A number of national institutions are providing online courses and e-content in different disciplines for this measure. Here, the 5G technology will support the educational setup by enhancing the opportunities for learning and certifications. The students will be able to easily download educational material, including videos, at high speeds and join live classes conducted online with negligible latency. In this new educational paradigm,

- A student can pursue an online education degree
- For any reason, if the candidate is unable to complete his/her degree, he/she will be able to resume his/her degree at a later stage.
- A number of add-on courses are available on the SWAYAM platform, the candidate has the option to complete the course and even to include the credits of the same in their regular curriculum.
- A candidate can pursue two courses with certain rules.
- A learner can undertake education without any physical or age restriction.

- A candidate can even pursue an online Ph.D. degree according to to set guidelines.

Formation of the National Educational Technology Forum (NETF)

The government has been formulating various guidelines for the use and integration of technology to improve various aspects of education. For this specific purpose, an autonomous body, the National Educational Technology Forum (NETF) will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, and administration, both for school and higher education. The NETF will have the following functions [10]:

- i. To provide independent evidence-based advice to Central and State Government agencies on technology-based interventions;
- ii. To build intellectual and institutional capacities in education technology;
- iii. To envision strategic thrust areas in this domain;
- iv. To articulate new directions for research and innovation.
- v. To lay down standards of content, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, Schools, HEIs, etc.
- vi. To maintain a regular flow of authentic data from multiple sources including educational technology innovators and will engage with a diverse set of researchers to analyze the data.
- vii. To conduct multiple regional and national conferences, workshops, etc. to solicit inputs from national and international educational technology researchers, entrepreneurs, and practitioners.
- viii. To Identify technological interventions for the purpose of improving the teaching-learning and evaluation process, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management, and administration including processes related to admissions, attendance, assessments, etc.
- ix. To categorize emergent technologies based on their potential and estimated frame for

disruption, and periodically present this analysis to MoE.

Applications of 5G services to Achieve NEP Goals

The NEP is working towards improving the online and digital educational environment to provide quality education and training. In the post-COVID scenario, multiple internet-backed online learning platforms played a critical role in conducting classes and examination activities. With the complete availability of 5G services in the entire nation, the following applications of the technology will help achieve the goals of the NEP. With the widespread implementation of 5G services, the data transfer activities of uploading, downloading, and storing will function with negligible latency time, which will enhance responsiveness, making the live interactions more approachable.

Video Conferencing: Real-time and uninterrupted conferencing with even less latency will create a seamless environment for the learners and teachers. Uninterrupted, real-time, high-quality interactions will feel like real-life conferencing.

Virtual Reality: VR creates an immersive virtual environment, which requires a headset device to observe and feel the situation. VR can help create a hyper-interactive, immersive, and captivating medium for a more effective means of communication and information exchange.

Augmented Reality (AR): The Augmented Classroom is a platform for teachers to increase learning results by using interactive and multisensory AR apps on all kinds of devices. Augmented Reality in education will enhance the learning abilities of the students like problem-solving, collaboration, and innovative creation, which will lead to better IQ and confidence of the students for the future with higher proficiency.

In today's classrooms, augmented reality (AR) education tools are a brilliant way to introduce concepts to students and excite them about any subject. Not only can they go beyond textbooks and abstract concepts and make them "real", but many of the AR tools can also work independently of the teacher and are not bound by the physicality of a classroom. Moreover, as opposed to the typically expensive technical requirements of a full virtual reality setup, like a headset and gloves, education

tools based on augmented reality usually only need equipment that is already available to the students, such as computers, smartphones, tablets, and internet connectivity (which will soon be enhanced with 5G connectivity). There are many AR model creation platforms available, some of which are given below.

Holo-SDK: Holo-SDK is an augmented reality software development kit (AR SDK) for Desktop AR, so that VR/AR developers can easily make various Desktop AR applications or Holo-APP for education and training purposes.

Grib: Grib platform is available for 3D content creation without requiring many technical skills.

Eduverse Metaverse: Eduverse is another online learning environment, which provides a safe and secure metaverse for K-12 schools.

MERGE Cube: The Merge Cube provides a new way of learning and interacting with the digital world. The students can explore galaxies, and earth in their surroundings (such as on their hands) with 3D creation, which proves to be a highly interactive way of learning.

Waypoint EDU: Waypoint EDU is designed for small-scale geocaching. One can play outdoors using iPhone or GPS-enabled iPads, or even play indoors using printable Hunt Cards.

3D Bear: VR and AR provide the ultimate immersive training experience, allowing students and professionals to learn in a virtual environment that is professional, realistic, and not just theoretical. Being able to see how something looks even before actually executing it, creates trust and confidence while reducing the cost of training as well as operational costs. This tool is available for the creation of VR objects.

These tools allow the students and teachers to create and share their own AR and VR models. Facilities like these provide the students with the ability to develop applications of their own interest such as games and use the technology for other educational purposes.

Cloud Accessibility: Nowadays, several service providers are providing cloud-based storage solutions at a very minimal cost. The government

too owns its own shareable cloud storage. With the availability of 5G and later 6G services, a user can access text, 3D resources, live interaction, multimedia information, and social platforms in a faster, more interactive, and more efficient manner.

Boosting Educational Scenario by Integrating New Emerging Technology

With the integration of 5G services and other new emerging technologies in the field of education, learning, and teaching, both the students and the instructors will get significant opportunities to update and enhance their knowledge levels. With the availability of AR and VR-based teaching methodology and the faster means of accessing them, one can increase the understanding and confidence in the subjects learned. It is indeed very difficult for the teacher to explain a lot of the topics in limited formats like text and 2D images. Now with the advent of fast communication mediums and supporting AR/VR creation tools, they will be able to share their knowledge with the learners in a better way. In a few years “Metaverse” technology will be available to transform existing teaching-learning scenarios into the metaverse-enabled AR/VR environment. The effects of the integration of these new technology concepts into the education paradigm will be directly visible in all the following levels of education.

- Primary and Secondary Education
- Higher Education
- Online Education
- Research
- Agricultural
- Medical
- Technical and many more.

Conclusion

The above discussion brings into focus the future direction of education, learning, teaching methodologies, and environment. The government has already launched 5G connectivity services and has even initiated working on bringing 6G services to the nation. Here, we have discussed the impacts of these developments mainly in the educational sector, but these facilities will benefit all other fields and industries as well, including but

not limited to, E-Commerce, E-Transport (Uber, Ola, etc), Internet of Things (IOT) and almost all the business applications. This will help not only to accelerate the growth of businesses but will also enhance employment and job opportunities, leading to the overall development of the economy. With the recent advancements in technology, intensive training for AR/VR creation and other supporting fields is needed for both the learners and teachers to utilize the full potential of these new tools so that the formulated objectives of NEP can be successfully realized.

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The Implications of National Education Policy—2020 for Educationally Backward Communities

Kalpana Zutshi* and Ifra Aman**

The National Education Policy (NEP) —2020 has been proposed after 3 decades and its aim is to meet the many development requirements of the Indian education system. This policy proposes a review and redesigns of all aspects of education viz. structure, including regulation and governance, to create a new system in line with the ambitious goals of education of the 21st century. The policy recognizes the importance of interventions to promote the education of children from all minority communities, especially those with low levels of education. This policy reaffirms that bridging the gap between social groups in terms of access and learning outcomes in general education will continue to be one of the primary goals of all development programs education sector. Minorities are more or less represented at school and in higher education. It is important to understand the survival strategies of disadvantaged and vulnerable OBC children whose children come from affluent families that have a significant impact on learning. While the NEP provides a great platform for these children to improve their future, it can have a lot of gray and white patches. The aim of this study was to find the bright sides in the clouds and combine all the merits and demerits of this policy.

The discipline of education refers to the methods of teaching and learning that take place in schools or school-like environments as opposed to various non-formal and informal socialization methods. Inclusion and equity in education are key to achieving social justice and equality--- Providing equal opportunities for all citizens to dream, thrive, and contribute to the nation is crucial to achieving an inclusive and equitable society. Regardless of a child's birth or background, India's education system should provide equal opportunities to learn and excel¹.

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The National Education Policy (NEP) has been largely accepted across the country. In this National Education Policy 2020, we address the many growing developmental imperatives that our country faces after more than three decades. The policy proposes to revamp all aspects of the education structure, including its regulation and governance, to create a new system aligned with 21st-century aspirations in education¹. NEP is needed to change our prior education system because, in a changing global scenario, changes must be made to current education systems to meet the needs of knowledge-based economies. New education methods must be developed to promote innovation and research and enhance the quality of education⁶. The new National Education Policy (NEP) 2020 of India provides a comprehensive framework from elementary education to higher education along with vocational & technical education and a new paradigm of internet-based e-learning. To build a new education system in India that perfectly aligns with the principles of the United Nations' 2030 agenda for sustainable development, the five founding pillars of the policy have been considered, namely access, equity, affordability, accountability, and quality⁵.

National Education Policy and Educational Backward Community

OBCs (Other Backward Classes) have been identified as educationally backward communities because they have historically been socially and educationally backward and require special attention^{1,6}. Minorities also are notably underrepresented in college and better education. One desires to apprehend the existence trajectories of the underprivileged and prone OBC kids that the kids from prosperous backgrounds have a tremendous impact on their Learning. Many factors, including lack of access to quality schools, poverty, social and cultural factors, and language, adversely affect enrollment and retention rates in educational backward community¹.

Socio-Economically Disadvantaged Groups (SEDGs) are majorly categorized based on gender identities, sociocultural identities (such as SC, ST,

OBCs, and other minorities), geographical identities (such as students from different districts), disabilities, and socioeconomic conditions¹. According to the data given by U-DISE in 2016-17, about 19.6% of school students belong to Scheduled Castes at the primary level, later this fraction falls to 17.3% at the higher secondary level. These enrolment drop-offs are more severe for students belonging to Scheduled Tribes (10.6% to 6.8%), and differently-abled children (1.1% to 0.25%), with even further tail-off for female students within each of these categories. The decline in enrolment in higher education is even precipitous¹. Providing a standard education to females is the best way to incline the education levels for these SEDGs. The NEP thus recommends that the policies and its schemes designed to include students from SEDGs should be especially targeted towards female students in these SEDGs¹. This policy additionally recognizes the special and critical role that women play in society and in shaping social mores¹. Another applauding step that the policy tenders are to universalize faculty training in any respected degrees by increasing the admission to extra early adolescence training. It similarly envisions a one hundred percentage (100%) Gross Enrolment Ratio (GER) from Pre-Primary to Secondary level (age institution of three to 18 years) in faculty training through 2030 thereby proffering a sturdy foundational literacy and numerically for all⁵.

This policy is intended to develop open structures and distance learning (ODL) as well as massive open online courses (MOOC). The policy also suggests that instructional materials can be in the mother tongue of the regional or local language until at least 5th grade, as it demonstrates greater creativity and understanding. The assessment modules of this policy will feature a complete shift from program results-based assessment to a year-round assessment structure with regular and formal assessments that will support learning and development. It will also test higher-order skills, analytical and critical thinking¹.

In addition, students will now have the flexibility to choose their interests in subjects ranging from arts and sciences to career and academic streams, as well as extracurricular and co-curricular activities. Another idea of this policy claims is the concept of bag-free days or internships for students, to open them up to real-world insights on topics of interest from

local experts and to spread the skills at an early age. Apart from all this, there are many other successful policies and programs such as targeted scholarships, conditional money transfers to encourage parents to send their children to school, providing bicycles for transportation, etc. significantly increasing children's participation in school systems in certain areas⁶. Alternative forms of schooling will be encouraged to preserve their traditions or alternative teaching styles will enable children studying in these schools to achieve defined learning outcomes for grades 1 to 12¹. Students from these schools will be encouraged to take other state or board tests and assessments by the NTA and thereby enroll in institutions of higher education. Teacher competencies in the teaching of science, mathematics, languages, and social studies will be developed, including orientation towards new pedagogical practices^{1,6}. Libraries and laboratories will be consolidated and adequate reading materials available^{1,6}. Scholarships and other opportunities and programs available to SEDG students will be coordinated and advertised through one agency and one website to ensure awareness among all students. The school curriculum will include material on human values such as respect for all, empathy, tolerance, human rights, gender equality, non-violence, global citizenship, inclusion, and equality. This will also include a deeper understanding of cultures, religions, languages, gender identities, and more to raise awareness and develop respect for diversity³. All biases and stereotypes in the school curriculum will be removed and more material and more appropriate for all communities will be included³.

Provisions Related To Higher Education

The total enrollment rate in higher education institutions under NEP 2020 is targeted to increase from 26.3% (in 2018) to 50% and 3.5 thousand new seats will be added in educational universities. For all types of higher education except medical and legal education, the Higher Education Commission of India will be established to replace UGC. A multidisciplinary teaching and research university equivalent to IITs and IIMs will be established². Currently, higher education bodies are regulated through bodies like University Grants Commission (UGC), All India Council for Technical Education (AICTE), and National Council for Teacher Education (NCTE)². There will be four bodies of the Higher Education of Commission (HECI):

- **National Higher Education Regulatory Council (NHERC):** It will act as a regulator for the higher education sector including teacher education.
- **General Education Council (GEC):** This may produce the framework of expected learning outcomes for higher education programs.
- **National Accreditation Council (NAC):** These established institutions are licensed and can operate primarily based on basic criteria; public self-disclosure, good governance, and results.
- **Higher Education Grants Council (HGFC):** This body finance work for schools and universities.
- Provide socio-emotional and academic support and mentoring for all such students through suitable counseling and mentoring programs.
- Ensure sensitization of faculty, counselor, and students on the gender-identity issue and its inclusion in all aspects of the HEI, including curricula.
- Strictly enforce all no-discrimination and anti-harassment rules.
- Develop Institutional Development Plans that contain specific plans for action on increasing participation from SEDGs, including but not limited to the above items.
- Develop bridge courses for students that come from underprivileged academic backgrounds.

Steps To Be Taken by Governments¹

- Earmark suitable Government funds for the education of SEDGs.
- Set clear targets for higher GER for SEDGs.
- Enhance gender balance in admissions to HEIs.
- Enhance access by establishing more high-quality HEIs in aspirational districts and Special Education Zones containing larger numbers of SEDGs.
- Provide more financial assistance and scholarships to SEDGs in both public and private HEIs.
- Conduct outreach programs on higher education opportunities and scholarships among SEDGs.
- Develop and support technology tools for better participation and learning outcomes.

Steps To Be Taken by HEIs¹

- Mitigate opportunity costs and fees for pursuing higher education.
- Provide more financial assistance and scholarships to socio-economically disadvantaged students.
- Conduct outreach on higher education opportunities and scholarships.
- Make admissions processes more inclusive.
- Make curriculum more inclusive.
- Increase the employability potential of higher education programs.
- Develop more degree courses taught in Indian languages and bilingually.
- Ensure all buildings and facilities are wheelchair-accessible and disabled-friendly.

Challenges Faced by National Educational Policy²

- **Cooperation** – most of the states of India have their school boards. Therefore, the State Governments have to come forward for the effective enforcement of this decision. Also, the idea of bringing a National Higher Education Regulatory Campus as the top controlling organization can be opposed by the state government.
- **Expensive Education**-The new national education policy paved the way for admission to foreign universities. Various scholars believe that admission to foreign universities can be expensive for the Indian educational system. As a result, it can be challenging for lower-grade students to pursue higher education.
- **Financing** - Ensuring funding will purely depend on how strong the will to spend the proposed 6% of GDP as public expenditure on education.
- **Lack of Human Resources** - Currently we are lacking skilled teachers in elementary education. In this situation, the implementation of the system made for elementary education under the National Education Policy 2020.

Suggestions^{4,7}

- Reform the right to education based on results.
- Improve public schools in terms of quality and social inclusion.

- freeing up budget allocations for education.
- Universalization of lower secondary education.
- Replication of successful government school systems.

Conclusion

It has been concluded that this policy reaffirms that bridging the gap between social groups in terms of access and learning outcomes in general education is one of the primary goals of all development programmes in the education sector. It has also been concluded that this policy may face a few challenges and efforts to be put in so that they can be rectified.

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Use of Education as a Tool for Empowerment

Bandaru Dattatreya, Hon'ble Governor of Haryana delivered the Convocation Address at the 10th Convocation Ceremony of Lingaya's Vidyapeeth (Deemed-to-be-University), Faridabad on March 24, 2022. He said, "We need to be ready to face challenges and convert them into opportunities. We have to move forward to become a knowledge society. The market for the developed world has reached a plateau and a new search has been launched for new markets for trade and new avenues for cheap labor and services. New developments in information technology further fueled the process of globalization." Excerpts

I am glad to be among you all on the occasion of the 10th convocation of Lingaya's Vidyapeeth, an important seat of learning in the private sector, a deemed-to-be university. Let me at the very outset put on record my congratulations and best wishes to the entire family of Lingaya's Vidyapeeth for playing an important role in imparting quality education to our students, who are the backbone and future of the nation.

It gives me immense pleasure to know that today 750 students from the streams of Science and Technology, Commerce, Management, Humanities, and Law. It is encouraging indeed to note that two hundred sixty-two of them are female students. Out of a total of 29 students who have scored 8.50 CGPA, sixteen are girls. I am really happy to see our daughters marching ahead in their pursuits to achieve excellence and self-reliance. It is a good omen indeed!

Ladies and gentlemen, India is on the cusp of total metamorphosis. The whole world is looking toward us with a great deal of hope. Our exemplary fight against Covid-19 showed the world our collective strength and determination to rise to the occasion and deal with any challenges with ease. Our companies did not only produce anti-Covid vaccines for ourselves but for the whole world. A new India is in the making and you all have to be an important partner in the build-back process.

Accordingly, we need to be ready to face challenges and convert them into opportunities. We have to move forward to become a knowledge society. The market for the developed world has reached a plateau and a new search has been launched for new markets for trade and new avenues for cheap labour and services. New developments in information technology further fueled the process of globalization.

Our students need to be a Jack of all trades. Diversity in learning and exposure to multifaceted experiments, research and skills have become the need of the order. The run-of-the-mill approach won't work. R&D spurs innovation, invention, and progress. Every campus should be a hub of R&D activities so that our students are aligned with emerging technologies like Artificial Intelligence, Internet of Things, Blockchain Smart spaces, generative AI, graph technologies, and the metaverse.

Dear students, our expectations from you are very high. We don't only wish to see you a life of happiness, prosperity and good health but also want you to give back to society so that one is left out. I shall be happy if some of you become good entrepreneurs and create job opportunities for others. As per the 6th Economic Census, we have nearly 59 million entrepreneurs in the country. It is indeed an impressive number but we want to have more and more entrepreneurs.

Similarly, we are all aware of the fact that many aspiring students have to give up their studies for want of resources, opportunities, facilities, and guidance. Never ever forget that you have a great responsibility towards the students – boys and girls – hailing from weaker sections of society such as backward classes, scheduled castes, scheduled tribes, and minorities. Do take care of them. Do their hand holding! We know all fingers cannot be equal but all fingers have to be equally strong to make a strong, vibrant and inclusive India.

I would like to appeal to all degree holders to focus on building empathy, sympathy, patriotism and social cohesion. Our diversity is our strength. You have to be the harbingers of hope, reform, transform and perform. You all have to be the agents of positive change. Through the alumni association, you can always do wonders. You can run incubation centres,

career counseling programmes, and offer sponsorship to poor students and whatnot! I call upon you all to actively participate in *Azadi Ka Amrit Mahotsav* and give your best during *Amrit Kaal* so that when India celebrates the centenary of Independence, our country should be an ideal epitome of equality, fraternity, liberty, justice, and prosperity for all.

Ladies and gentlemen, whatever I have stated so far in my convocation address are in sync with our new National Education Policy-2020, which has to be implemented by 2030 nationally but Haryana is geared up to achieve the task by 2025 itself. NEP-2020 effectively takes care of almost everything. From entrepreneurship, digitization, accreditation, inclusivity, innovation, flexibility, smart classes, and moral values to skill development, NEP-2020 strives to achieve excellence through affordability, accessibility, quality, equity, and accountability.

In conclusion, I would like to share some of

the great observations made by the great monk Swami Vivekananda who said that education should cover all aspects of life– material, physical, moral, intellectual, spiritual, and emotional, as education is a constant process. He once said: “Education is not the amount of information that is put into your brain and runs riot there, undigested all your life. We must have life-building, man-making, character-making, assimilation of ideas.”

Let us resolve collectively to use education as a tool for empowerment of all in general and those left out in particular.

I congratulate the medal winners, and degree awardees and wish good luck to all of you and thank Lingaya’s Vidyapeeth administration, faculty members, and students for successfully organizing this convocation.

Thank You! Jai Hind!

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Mobile Education: A Tool of Modern Knowledge

Srija Rakshit*

Technology is rapidly growing in all aspects of modern societies, and education is no exception. In line with this trend, information and communication technology is increasingly utilized as a teaching and learning tool in educational activities. Academic institutions, like learning organizations, also pay considerable attention to the use of advanced technologies to facilitate their progress, especially in the areas of teaching and learning. Mobile learning has also emerged as a new technological achievement and educational trend that provides both educators and learners with ample opportunities. With the use of mobile technologies, the potential for effective teaching and learning is growing. This is due to the benefits of mobile learning, including the ability to share knowledge without any limits in space and time, the capacity to facilitate the development of critical thinking, participatory learning, problem-solving, and the development of lifelong communication skills.

In today's age of the internet, education is nearly possible from every corner of the world. Gone are those days of confined four-walled classroom learning, with mobile education coming into play. Mobile learning or M-learning is the new way to access knowledge with modern electronic devices connected to the Internet. Learning on portable gadgets like mobile phones, laptops, and tablets has made education most accessible than ever. Mobile phones have several applications that can be useful in the teaching and learning process, including general software, such as Word, Excel, etc. Educational mobile apps directly target the psychology of the students which helps them directly grab and understand the concept. The learning content comes in the form of podcasts, videos, app quizzes, and full e-learning courses. It allows people to determine where and when to learn and voluntarily get involved in the process of education. Some examples of mobile learning are Duolingo, Quizlet, TED-ed, Solo Learn, Udemy, Lingualeo. There are live as well as recorded lessons available which make mobile education even more feasible. Despite the

several advantages of M Learning, the shortcomings are not to be ignored. Such a type of learning can leave students open to distractions, lack much-needed social interactions, rely too heavily on technology, lack personalization, and most importantly exclude students with poor technology from the race. The lack of internet, software, and hardware issues are also some of the major hindrances in the application of such an education. Small screens and blue light radiations from the devices are reported to harm eyesight. Although their disadvantages, mobile learning is emerging to be the new trend in global learning. If combined with traditional learning, mobile learning can be the most beneficial tool for knowledge enhancement of the present as well as the upcoming generation.

It's no secret that more and more people today access the Internet from a smartphone. Desktop and laptop computers are still popular, and instead of choosing just one device, it has become the norm to own multiple devices and use them for different activities. Having the convenience of a mobile device gives students an edge. Besides online lectures, people can also use them for entertainment such as movies, games, and social media. We now live in a world that is smaller and more connected than ever before just because of mobile phones.

The term "mobile learning" is still developing day by day and its exact meaning is still unclear. Despite the ambiguity, there are some keywords to explain this concept. Traxler (2007) points out some keywords, such as personal, spontaneous, situated, private, and portable to explain mobile learning. Lan and Sie (2010) describe mobile learning as a learning model that enables learners to access educational materials anywhere and anytime using mobile and internet technologies. Some features of mobile devices are that they are generally cheap, portable, and flexible. Therefore, mobile technology seems to be very attractive to learners and usable in the learning process. Mobile phones have several applications that can be useful in the teaching and learning process, including general software, such as Word, Excel, and PowerPoint, and other applications, such as language learning, mathematical problem-solving

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software, etc. The main feature of mobile learning that distinguishes it from other learning technologies is its mobility. Despite the benefits of mobile learning, it can never fully replace traditional education, but if used correctly, it can increase the value of existing learning styles.

Globally, there has been a growing trend of using mobile phones for educational purposes, and many groups, especially teachers and students, use these devices for sharing information, consulting dictionaries, and thesauri. They have been portrayed as one of the applications for teaching and learning. It is a new opportunity for ICT use in education. “Mobile learning acceptance” is considered as the intention to use mobile technology or the attitude toward using that technology. In their study, Ball and Levy (2009) found that “experience” played an important role in faculty members’ acceptance of and intention to use new teaching technologies. In his qualitative study, Chun (2019) sought to examine the experiences of teachers in using mobile learning systems. His findings identified five topics, including (a) teachers’ perception of mobile learning, (b) motivations for adopting mobile learning, (c) standards of conduct in the use of mobile learning, (d) the challenges to the acceptance of mobile learning, and (e) the benefits of using mobile learning. Gan and Balakrishnan (2014) also examined the factors that can affect mobile learning acceptance and enhance teacher-student interaction during lectures, including ease of use, self-efficacy, and enjoyment. In their study on faculty members at Kentucky and Tennessee colleges, Thomas et al. (2014) identified the determinants of mobile learning adoption, including Internet access, educational programmes, calculators, and calendars. Potential obstacles include student cheating, inappropriate information on the Internet, cyberbullying, and disruptions. In another study, Bere and Rambe (2019) examined mobile learning in higher education in a developing country. The findings suggest opportunities for collaborative learning through knowledge sharing, developing academic communities, and immediate communication. The recommended mobile learning in this study can create shared learning environments, which can, in turn, enhance active learning opportunities. The Research Questions were:

1. What is Mobile Education?
2. What are the reasons for the growth of mobile education?

3. What are the advantages of mobile education?
4. What are the disadvantages of mobile education?
5. Is mobile education better than traditional education?
6. What is the future of mobile education in India?
7. What is the future of mobile education globally?
8. How can mobile education be combined with traditional learning to make it a more effective way of learning for students globally?

Advantages of Mobile Education

The Millennial generation has grown up with digital devices. So Mobile learning is tailored to the way millennials work and think. But there are so many advantages to M-learning that all generations can benefit from it. Some of the advantages of M-learning are discussed here.

Learn Anywhere and Anytime

M-learning enables learners to take their learning materials with them. Learners don’t have to be at a specific place or learn at the same time. Their learning content is available for them in their pockets. Waiting time or traveling time can also be used for learning the course material. Come on! It’s even possible to take an online course or complete a survey while lying in bed!

Motivation

Employees can feel motivated to learn something new or to take online training if they know they can take their learning materials everywhere with them. That is especially the case if they don’t have time to learn during their regular work hours.

Real-Time Feedback

Mobile Learning facilitates (and speeds up) any feedback one may want to receive. Since it’s much easier to access the content, one can expect higher completion rates and faster results and statistics from online tests. It can reach scattered learners that are always on the go and need easy access to content.

Variety of Content

A lot of content is present online. Due to its huge volume and variety, it becomes very easy for people to access it; and people from different corners of the world can access it for different topics or related to different subjects.

Encourages Students

There are many educational apps that use online quizzes to keep track of progress (daily, weekly, or monthly, depending on the firm to firm). The study material is presented in such a way that it attracts the students. Forms like games, quizzes, etc., encourage students to perform better.

Tests the Knowledge

As discussed, solving these quizzes, puzzles or riddles helps expand one's knowledge. Apart from just study material, there are different types of other quizzes, puzzles, multiple-choice questions, etc. that are available on the internet; playing these games can test one's knowledge and even increase one's IQ level.

The Disadvantages of Mobile Education

Along with many advantages, there are also some disadvantages to mobile learning. Some disadvantages of mobile learning are discussed here.

Distraction

Mobile devices can be a great distraction. Mobile Learning can be distracting if your users get constantly interrupted by text messages and notifications. Therefore, it requires self-discipline and focus.

Dependence on Internet and Electricity

Using mobile devices for e-learning could be an issue if the learners don't have an Internet connection or electricity readily available.

The Screen is Too Small

Mobile learning might not work very well for certain types of content. Technical topics with detailed images may not be legible on a small screen, the same goes for complicated mathematical equations or even long essays. For those tasks that require more visualization, a bigger screen may work better.

Software Issues

Software is an application that runs on a device according to the instructions embedded in the software at the time of coding. Even though it seems like the life of software is smooth, there are other external factors that hinder its smooth life span. These external factors are changing trends in the field of IT. Software compatibility issues, not upgrading to a new version, regular system crashes, etc. are some of the issues

that hinder the working of the software, thereby interrupting the smooth mobile learning experience.

Hardware Issues

Unlike software, hardware uses physical devices. The physical devices used can wear out after a period. They can wear out due to overuse, dust, using the device roughly, etc. These are some factors that interrupt the smooth working of mobile or other devices.

Conclusion and Suggestions

Although mobile learning can never fully replace traditional learning, it can increase the value of existing learning styles if used correctly (Liaw et al., 2010). As mentioned in the introduction, before designing and implementing a mobile learning system, it is important to assess future users' perceptions of mobile learning, since their views do significantly affect their willingness to adopt mobile learning (Mahat et al., 2012). Despite the faculty members' critical role in promoting mobile learning acceptance, studies have so far mainly focused on examining the factors that influence student acceptance (Uzunboylu and Ozdamli, 2011). Therefore, the present study evaluated faculty members' mobile learning acceptance in education as one of the important factors. Further studies can be performed to assess m-learning acceptance among other users of this programme. Comparing the attitudes of all users could help researchers open broader horizons in this field. It is also suggested that further similar research be carried out in other faculties and departments to compare and evaluate the results.

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AIU Publication

on

REIMAGINING INDIAN UNIVERSITIES

'Reimagining Indian Universities' edited by Dr. (Mrs) Pankaj Mittal and Dr S Rama Devi Pani is a collection of essays by some of the greatest thinkers in the field of Indian higher education. Each essay in the book examines one or more of the critical topics and provides solutions and methods to overcome the issues involved in them. It provides new solutions and methods in the form of reforms and innovations to elevate Indian universities to world-class top-ranking levels. The book aims at providing a roadmap to government as well as the universities to gear themselves towards becoming more responsive to the present and future demands of higher education. Generating a corpus of new ideas that are significant for reimagining, reforming and rejuvenating Indian higher education system, Book is 'must read' for all those who are interested in reforming Indian Higher Education System.

The release of the book in the Annual Meet of Vice Chancellors 2020, coincides with the launch of New Education Policy. The Foreword for the Book was written by the then Minister of Education Shri Ramesh Pokhriyal 'Nishank'.

PP: 372, Unpriced. Available at AIU Website: www.aiu.ac.in

CAMPUS NEWS

Faculty Development Programme on Latest Perspectives of Research

The eleven-day Faculty Development Programme on 'The Latest Perspectives of Research in Behavioural Sciences (Interdisciplinary)' was organized by the Department of Teacher Education, School of Education, Central University of South Bihar, Gaya under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) Scheme of Ministry of Education, Govt. of India from November 21- December 01, 2022, through online mode. The main objective of the programme was to acquaint the teachers of higher education institutions with the new techniques and strategies of research in behavioural science. The programme acted as a platform to acquaint the faculty members of Higher Educational Institutions across the country with the contexts, processes, outcomes, issues/problems, challenges and future prospects of research on behavioural sciences, especially from interdisciplinary perspectives.

The inaugural session of the programme was chaired by Prof. Kameshwar Nath Singh, Vice Chancellor, Central University of South Bihar, Gaya, and Prof. Harikesh Singh, former Vice Chancellor, Jai Prakash University, Chapra, Bihar was the Chief Guest of the programme. Prof. Kameshwar Nath Singh made the audience and participants mesmerized with his words of wisdom in his presidential address in the inaugural session. He stated that research is a rigorous practice which needs passion, perseverance, honesty and dedication. It makes the teachers capable and competent enough to bring quality education. Prof. Harikesh Singh, in his speech in the inaugural session, emphasized that every research must add an iota of knowledge to the existing knowledge. He said that the Indian knowledge system must be given priority in research through the medium of Indian languages. A total of 113 participants from various universities and colleges across 20 Indian states took part in the programme. A total of 25 resource persons (one from Indiana University, USA and twenty-four from different reputed universities/institutions of the country) contributed to the programme by enlightening and enriching the participants on

the latest perspectives on research in behavioural sciences across forty sessions in the programme. The various stalwarts of the Education fraternity were present as the resource persons of the programme who explained the different complex concepts of research in Behavioural Sciences.

The main focus areas of discussion in the programme were Introduction to Research and its Types, Pre-positivism, Positivism and Post-positivism in Research, Qualitative Research Perspectives in relation to Quantitative Research Perspectives, Qualitative Approaches to Study Human Behaviour, Quantitative and Qualitative Research Tools, Behavioural Science Research and Research in General Sciences-A Comparison, Experimental Research and its Designs, Semantic Differential Analysis, Q-Methodology, The Context and Techniques of Using Statistics in Behavioural Research, Uses of Statistical Software for Data Analysis in Behavioural Research, Historical Research-A Qualitative Research Method in Behavioural Sciences, Policy Analysis-Purposes and Processes, Grounded Theory Research, Ethnomethodology, Symbolic Interactionism, Narratives, Phenomenological Research, Discourse Analysis, Interpretative Study, Naturalistic Inquiry, Participatory Research, Case Study, Content Analysis, Triangulation, Significance and Process of Using Mixed Methods Research in Behavioural Sciences, Behavioural Research for Innovation and Development, Frontline Areas of Behavioural Research, Interdisciplinary Research in Behavioural Sciences-The Way Forward, Research Issues in Diversified Behavioural Sciences- Social Sciences, Psychological Sciences, Educational Sciences and other Such Fields, Issues of Quality of Research in Behavioural Sciences-The Global Perspective and others.

The Valedictory Session was chaired by Prof. Prakash Chandra Agarwal, Principal, Regional Institute of Education, NCERT, Bhubaneswar. He inspired the participants to be honest and transparent while conducting research in behavioural sciences. He suggested that research requires patience and is a time-consuming affair, therefore, mutual cooperation or collaboration is important in the process of

conducting research. The active involvement and cooperation of Prof. Kameshwar Nath Singh, Vice Chancellor, Central University of South Bihar, Gaya led the programme towards its success in the self-sustaining mode. Prof. Kaushal Kishore, Head, Department of Teacher Education, and Dean, School of Education, Central University of South Bihar, Gaya provided help and cooperation for making the programme successful. The programme was coordinated by Dr. Tapan Kumar Basantia, Nodal Officer of the PMMMMNTT Scheme and Associate Professor, Department of Teacher Education, Central University of South Bihar, Gaya, and Dr. Mitanjali Sahoo, Assistant Professor, Department of Teacher Education, Central University of South Bihar, Gaya and Dr. Sandeep Kumar, Assistant Professor, Department of Teacher Education, Central University of South Bihar, Gaya were the Co-coordinators of the programme.

International Conference on Uncertainty, Social Entrepreneurship and Role of Technology

A three-day International Conference on ‘Uncertainty, Social Entrepreneurship and Role of Technology’ is being organized by the Centre for Social Entrepreneurship (CSE), School of Management and Labour Studies, Tata Institute of Social Sciences (TISS), Mumbai during February 22-24, 2023 at its Mumbai Campus.

Entrepreneurship requires action (intentional behaviour), and so does social entrepreneurship. Therefore, to be an entrepreneur/social entrepreneur, the critical is to act on the identified opportunity. However, whether entrepreneurial action occurs, depends on how much one must rely on one’s judgment, which, in turn, depends on the degree of uncertainty experienced in the decision of whether to act (McMullen and Shepherd, 2006). It clearly indicates the importance of how it occurs (the process of entrepreneurship) and the individual, who does it (decision-making of the individual).

At the same time, the concept of ‘uncertainty’ has been of interest to researchers, particularly in areas concerned with decision-making and knowledge (Wakeham, 2015). It inevitably establishes a strong connection between the two, i.e., uncertainty and social entrepreneurship. It becomes crucial to understand the act of decision-making of an individual

under uncertainty in order to understand social entrepreneurship. Sometimes, crisis creates uncertainty, and in order to respond to the fluid nature of the crisis, decision-makers need to break out of existing patterns by focusing on social entrepreneurship.

Social entrepreneurship drives societal transformations, and social entrepreneurs concurrently act to address particular social issues and problems and empower transformational progress throughout the system (Gandhi & Raina, 2018). They also play important role in the recovery of areas struck by natural disasters (Chandra and Paras, 2020). They solve social and/or environmental problems and create social value. Social entrepreneurs are known as ‘change agents’ (Nicholls, 2006). Not only they face various forms of uncertainty in the process of solving the social problem, but sometimes, they also initiate entrepreneurship to address the problem created by the uncertain situation. In other words, like any other entrepreneur, a social entrepreneur also operates in the same uncertain world.

We have all witnessed how technology has enabled us to address many of the challenges created by the Covid-19 pandemic. For example, telemedicine services, work-from-home options and remote collaboration, and online school/college classes, to name a few. Technology has become a critical enabling tool for governments, international health organizations, and populations to enhance our collective response to the crisis (Mansouri, 2020). The current crisis has brought in many innovative use cases for existing technology. Tunisia deployed robots to check their awareness of lockdown rules and the reason for people’s movements during the lockdown. African countries, such as Kenya, have turned to mobile money as a public tool (ibid.). In India also, many start-ups have come forward to address the challenges during the pandemic. In response to the shortage of ventilators for critical care, start-ups such as Nocca Robotics, Aerobiosys Innovations and AgVa Healthcare are developing low-cost, user-friendly, and portable ventilators that can be deployed even in rural areas of India (Sahasranamam, 2020). There is a need to enhance the entrepreneurial mindset, technology adoption, and innovation, not only to continue the fight against COVID-19 but also to respond to other challenges created by uncertain situations in future. The themes of the event are:

- ***Uncertainty and Social Entrepreneurship Opportunities: Limitations, and Possibilities.***
- ***Coping/Dealing with Uncertainties in Social Entrepreneurship.***
- ***Role of Technology in Social Entrepreneurship in Uncertain Situations.***
- ***Role of Technology in Dealing with Uncertainties in Social Entrepreneurship.***
- ***FinTech and Social entrepreneurship.***
- ***4th Industrial Revolution and Social Entrepreneurship.***
- ***Agri-Tech and Social Entrepreneurship.***

For further details, contact Coordinator, Dr Archana Singh, Assistant Professor, Centre for Social Entrepreneurship, School of Management and Labour Studies, Tata Institute of Social Sciences, V N Purav Marg Deonar, Mumbai-400 088, Phone No: + 91 22 2552 5816, E-mail: cse.conference@tiss.edu

Workshop on Non-destructive Techniques for Concrete Structures

The one-day Workshop on ‘Non-Destructive Techniques for Concrete Structures’ is being organized by the Centre for Disaster Mitigation and Management, Vellore Institute of Technology, Vellore, Tamil Nadu on January 25, 2023. The practising engineers, faculty members and students of engineering colleges/polytechnic colleges may participate in the event.

The utilisation of concrete is exponentially increased for the development of infrastructure such as power plants, Irrigation structures, bridges, etc. Concrete undergoes deterioration due to corrosion of reinforcement, ageing, and other environmental conditions. For deteriorated concrete, it is necessary to evaluate to assess the state of concrete and reinforcement would help in to select proper remedial measures. The condition assessment of old and new concrete structures can be done using Non-destructive testing methods. These NDT techniques can play a supporting role in the decision-making process of the conditional assessment of the structure. NDT methods are preferred because they will not alter the appearance or functionality of the structure. The testing of existing structures is usually related

to an assessment of structural integrity or adequacy. The Topics of the Event are:

- Introduction to Non- Destructive Techniques.
- Crack Control Mechanism and Case Studies.
- Advances in Non-destructive Techniques.
- Demonstration of NDT Equipment.

For further details, Dr. P Rama Mohan Rao, Professor, Centre for Disaster Mitigation and Management, Vellore Institute of Technology, Vellore- 632014, Tamil Nadu, Phone No: 0416-2202282, Mobile No: 09751354789, E-mail: rao_pannem@vit.ac.in. For updates, log on to: www.vit.ac.in

National Seminar on New Educational Policy—2020

A two-day National Seminar on ‘New Educational Policy 2020: A Powerful Tool to Re-Establish Bharat as Vishwa Guru’ is being organised by the Department of Political Science, St. Aloysius College, Jabalpur, Madhya Pradesh on January 27-28, 2023. The event is sponsored by Indian Council of Social Science Research, New Delhi.

‘A *guru* is someone who has the power to see greatness even in the lowest man and has the power to raise it’. Since the beginning of civilization India has been the *Guru* for the whole world. When the whole world was groping in darkness, India was teaching about the identity of man with the Supreme. People from all around the world converged in India to gain from its priceless wisdom. Indeed, the country that showed the whole world its academic brilliance through Sushrutha, Kanad, and Aryabhatta deserves to gain the same pedestal of being ‘*Vishwa Guru Bharat*’ again. From Ayurveda to Indian science, there’s more to India that the world needs to know, learn, and adopt. India has all the potential to become *Vishva Guru* once again because of its value system, culture, and inherent belief in ‘*Vasudhaiva Kutumbakam*’. Now, is the time that the entire world also imbibes the spirit. The New Education Policy-2020 aims to overhaul the education system and create a new order that will meet the requirements of 21st century education while building upon India’s traditions and value systems. NEP–2020 is Indian in origin, international in its outlook, inclusive in its approach, and innovative and impactful in

its outcome. Access, accountability, affordability, equity, and quality are five pillars that will form the foundation of our future education ecosystem. It is aimed at transforming India and enabling the country to regain its position as *Vishwa Guru* and we will grow in knowledge, research, science and technology, and all spheres. The seminar is aimed at achieving a reinvigoration of novel research fields in academics. Research and development activities are the only pathways to reach the goals of the aspirational youth of India. The seminar targets the bridging of ancient knowledge with futuristic ideas. The Subthemes of the Event are:

- NEP: Origin, Implementation, and Future Path.
- Intellectual Legacy of India.
- Skill Development and Role of Vocational Training for Future Growth.

- Changes in Higher Education and Role of ICT.
- Ancient India’s Education System and its Influence on NEP—2020.
- Role of National Innovation and Start-up Policy.
- Impact of National Education Policy- 2020 on Higher Education.
- Making India a Global Education Hub Opportunities and Challenges.

For further details, contact Organising Secretary, Department of Political Science, St. Aloysius College, Jabalpur- 482001 (Madhya Pradesh), Mobile No: 9424086040/8839436653/ 799970908. For updates, log on to: staloysiuscollege.ac.in.



The Association of Indian Universities

The Association of Indian Universities (AIU), is one of the premier apex higher education institutions of the Country established in 1925. It is a research-based policy advice institution to the Government of India in the field of Higher Education, Sports, and Culture. Since its inception, it has been playing a vital role in shaping Indian higher education. Most importantly, AIU is vested with the power of according equivalence to Degrees/Qualifications offered by the universities across the world with those offered in India. AIU has also been mandated by the Department of School Education, Ministry of Education, Government of India to accord equivalence to the Indian Boards for the Secondary/Senior Secondary Examination vide Gazette Notification. AIU is a think tank body with the responsibility of undertaking academic activities such as: conducting Research Studies in higher education; acting as the bureau of information on higher education; liaising with international bodies and universities for the internationalisation of Indian higher education among many others. AIU conducts inter-university sports and cultural events at national and international levels. As a National Sports Promotion Organization (NSPO) it promotes sports among Member-Universities and maintains the standards in sports.

Being an apex advisory institution, it constitutes an integral part of all major decision-making committees and commissions in the country. As a representative body of Indian universities, it facilitates cooperation and coordination among Indian universities and liaises between the universities and the Government (Central as well as the State Governments) and also National and International bodies of higher education in other countries in matters of common interest. Whereas all the Indian universities benefit from its contribution, at present it has a membership of about 898 universities including 14 overseas universities from other countries viz. Bhutan, UAE, Kazakhstan, Mauritius, Malaysia Nepal, as Associate Members.

Some of the legends among many, who served AIU as its Presidents are Dr. Sarvepalli Radhakrishnan, Dr Zakir Hussain, Dr. Syama Prasad Mukherjee, Dr K L Shrimali A.L Mudaliar, Dr Akbar Hydary, Prof A C Woolner, Pandit Amarnath Jha, Sir Maurice Gwyer, Dr K L Shrimali, Prof Shiv Mangal Singh ‘Suman’, Prof M S Gore, Prof M S Adiseshiah, Prof M S Valiathan.

THESES OF THE MONTH

SCIENCE & TECHNOLOGY

A List of doctoral theses accepted by Indian Universities (Notifications received in AIU during the month of Oct-Nov, 2022)

BIOLOGICAL SCIENCES

Biochemistry

1. Senghor, K A Arul. **Study of adipocytokines and hormonal status in female infertility.** (Dr. S. Meera and Dr. V M Vinodhini), Department of Biochemistry, SRM University, Kattankulathur, Chennai.

Food Science & Nutrition

1. Kinth, Priyamvadah. **Nutraceuticals as dietary supplements: An assessment of consumer experience.** (Dr. Yogesh Suman), Faculty of Mathematical and Information Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Life Science

1. Arvind, Kharche Shalmali. **Conformational dynamics and interaction landscapes of chemokine-receptor complexes.** (Dr. Durba Sengupta), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Chaudhary, Babita. **Characterization and biochemical analysis of polysaccharides extracted from selected seaweeds along Gujarat coast.** (Dr. Avinash Mishra), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Dey, Sanchita Sanchaya. **Understanding the pH regulatory mechanism in anthropophilic fungus *Trichophyton rubrum*.** (Dr. Bhupesh Taneja), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

4. Sharma, Ankita. **AMPK mediated induction of autophagy for clearance of amyloid beta in Alzheimer disease.** (Dr. Gurdarshan Singh), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

5. Shivanand, Swami Sagar. **Biological evaluation of novel small molecule inhibitors against *Mycobacterium tuberculosis*.** (Dr. Dhiman Mrinal Sarkar), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

6. Singh, Krishna Bhan. **Optimization of combination therapy of bone anabolic parathyroid**

with an anti-resorptive agent for management of osteoporosis. (Dr. Divya Singh), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

7. Sirisha, Natani. **Unraveling the molecular mechanisms involved in neuroendocrine differentiation of prostate cancer.** (Dr. Ramesh Ummanni), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

8. Sudharshan, J. **Significance of additive materials in the anaerobic digestion process for the generation of methane rich biogas from organic wastes.** (Dr. A. Gangagni Rao), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Microbiology

1. Jayaprakash, T. **Study on the correlation of inflammatory markers with HLA -B-27 subtypes within the spectrum of spondyloarthritides.** (Dr. Leela K V), Department of Microbiology, SRM University, Kattankulathur, Chennai.

Zoology

1. Rathi, Pragati. **Impact of dietary probiotic supplementation on immune response and growth performance of *Labeo calbasu* (Hamilton, 1822) and evaluation of cutaneous mucosal antimicrobial bacteria.** (Dr. Anita Bhatnagar), Department of Zoology, Kurukshetra University, Kurukshetra.

EARTH SYSTEM SCIENCES

Geophysics

1. Sharma, Anjali. **Modelling of empirical accelerograms, evaluation of seismic hazard in the Central Seismic Gap Region of Himalaya based on site effects and simulated accelerograms.** (Dr. Dinesh Kumar and Dr. Ajay Paul), Department of Applied Geophysics, Kurukshetra University, Kurukshetra.

ENGINEERING SCIENCES

Chemical Engineering

1. Ban, Gaurangkumar Hazariban. **Studies on online measurement and modelling of PM 2.5 and**

PM10 released from the coal fired boilers. (Dr. J. P. Ruparelia), Department of Chemical Engineering, Nirma University, Ahmedabad.

2. Sivaprashanth, J. **Impact of mobile element's tour on energy consumption in wireless sensor networks.** (Dr. K. Yamuna Rani), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Suthar, Krunal Jagdishchandra. **Determination and estimation of some important properties of ammonium and phosphonium salt-based deep eutectic solvents.** (Dr. M. H. Joshipura), Department of Chemical Engineering, Nirma University, Ahmedabad.

Civil Engineering

1. Elango, P. **Nonlinear ultrasonic characterization of internal damage in concrete due to loading.** (Dr. K. S. Satyanarayanan), Department of Civil Engineering, SRM University, Kattankulathur, Chennai.

2. Mehta, Sujata Hemprakash. **A Novel SMA damper for enhanced seismic response of structural systems: Some investigations.** (Dr. Sharad Purohit), Department of Civil Engineering, Nirma University, Ahmedabad.

3. Natarajan, S. **Strength characteristics of nano silica concrete columns with glass fibre reinforced polymer rebars and with wrapping.** (Dr. S. Senthil Selvan), Department of Civil Engineering, SRM University, Kattankulathur, Chennai.

4. Shaik, Niyazuddin. **Experimental and analytical studies on strength and durability properties of pervious concrete.** (Dr. S Senthil Selvan), Department of Civil Engineering, SRM University, Kattankulathur, Chennai.

5. Ramasubramani, R. **Investigation on the effect of M-sand in coconut shell concrete.** (Dr. K. Gunasekaran), Department of Civil Engineering, SRM University, Kattankulathur, Chennai.

Computer Science & Engineering

1. Chudasama, Vipul H. **Proactive workload prediction and resource management in hybrid cloud using machine learning techniques.** (Dr. Madhuri Bhavsar), Department of Computer Science & Engineering, Nirma University, Ahmedabad.

2. Gayathri, M. **Novel framework for multimodal biometric image authentication.** (Dr. C. Malathy), Department of Computer Science & Engineering, SRM University, Kattankulathur, Chennai.

3. Karthik, M Ganesh. **Providing comprehensive security framework for IoT using machine learning algorithms.** (Dr. M. B. Mukesh Krishnan), Department of Computer Science & Engineering, SRM University, Kattankulathur, Chennai.

4. Poonkodi, M. **Proficient approaches for human action recognition and prediction in surveillance videos.** (Dr. G. Vadivu), Department of Computer Science & Engineering, SRM University, Kattankulathur, Chennai.

5. Rajesh Babu, C. **Elitecorn: An elite dynamic spectrum management framework for cognitive radio networks in 5G.** (Dr. B Amutha), Department of Computer Science & Engineering, SRM University, Kattankulathur, Chennai.

6. Sonawane, Bhakti Maneesh. **Decision support system for clinical diagnosis based on emotion detection.** (Dr. Priyanka Sharma), Department of Computer Science & Engineering, Nirma University, Ahmedabad.

Electrical Instrumentation Engineering

1. Bhatt, Jiten Harkantbhai. **Multivariable control of miniature stirling cryo-coolers.** (Dr. Jayesh Barve), Department of Electronics & Instrumentation Control Engineering, Nirma University, Ahmedabad.

2. Patel, Nital Sanjay. **Soft sensors for primary clarifier in industrial effluent treatment plant.** (Dr. Jayesh Barve and Dr. J. P. Rupareliya), Department of Electronics & Instrumentation Control Engineering, Nirma University, Ahmedabad.

Electronics & Communication Engineering

1. Bhavesh. **Study and realization of heterogeneous learning architecture for knowledge distillation based classification.** (Dr. N P Gajjar), Department of Electronics and Communication Engineering, Nirma University, Ahmedabad.

2. Gupta, Jay Vishnu. **Millimeter-wave hybrid mode horn geometries and challenges in realization.** (Dr. Dhaval Pujara), Department of Electronics and Communication Engineering, Nirma University, Ahmedabad.

3. Iyer, Sumitra Narayan. **Investigation and forecasting of variation in ionospheric TEC in the equatorial region.** (Dr. Alka Mahajan), Department of Electronics and Communication Engineering, Nirma University, Ahmedabad.

4. Nitin Kumar. **A novel optimized energy-efficient clustering approach for prolonging the network lifetime in heterogeneous wireless sensor network.** (Dr. Vinod Kumar and Dr. Pawan Kumar), Department

of Electronics & Communication Engineering, SRM University, Kattankulathur, Chennai.

5. Priya, P Banu. **Investigations on prediction of epileptic seizures for the development of IoMT based real-time predictor.** (Dr. B. Ramachandran), Department of Electronics & Communication Engineering, SRM University, Kattankulathur, Chennai.

6. Shah, Dharambhai Jayeshkumar. **New hyperspectral endmember extraction algorithms using convex geometry.** (Dr. Tanish Zaveri and Dr. Y. N. Trivedi), Department of Electronics and Communication Engineering, Nirma University, Ahmedabad.

Mechanical Engineering

1. Chourasia, Sajjan Kumar. **Studies on tribo-corrosive behaviour of various biodiesel to optimize it's blend With Diesel for CI engine applications.** (Dr. R N Patel and Dr. A M Lakdawala), Department of Mechanical Engineering, Nirma University, Ahmedabad.

2. Manickam, P Susai. **Design of a cage and its biomechanical study for cervical spine at the C4-C5 level.** (Dr. Sandipan Roy), Department of Mechanical Engineering, SRM University, Kattankulathur, Chennai.

3. Patel, Hiteshkumar Harjivanbhai. **Investigations on leakages in rotary positive displacement machines.** (Dr. V. J. Lakhera), Department of Mechanical Engineering, Nirma University, Ahmedabad.

4. Suthar, Jigar Dhirajkumar. **Development and machining of aluminum hybrid metal matrix composite.** (Dr. K M Patel), Department of Mechanical Engineering, Nirma University, Ahmedabad.

Structural Engineering

1. Rajesh. **Studies on radiofrequency cold plasma treatment for seed germination.** (Dr. N S Aulakh), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

MATHEMATICAL SCIENCES

Mathematics

1. Eunice, Jemima D. **A study on tauberian conditions for statistical convergence from statistical summability in non-archimedean fields.** (Dr. V Srinivasan), Department of Mathematics, SRM University, Kattankulathur, Chennai.

MEDICAL SCIENCES

Pharmaceutical Science

1. Kokilambigai, K S. **Development and validation of analytical methods for selected drugs and combinations using quality by design and green**

chemistry approach. (Prof. K. S. Lakshmi), Department of Pharmacy, SRM University, Kattankulathur, Chennai.

2. Priya, D. **Design, synthesis and evaluation of novel 1, 5-diaryl pyrazole derivatives as cancer associated selective cox-2 inhibitors.** (Dr. M. K. Kathiravan), Department of Pharmacy, SRM University, Kattankulathur, Chennai.

3. Ravula, Sahithya Ravali. **Comparative effectiveness of ranolazine and saroglitazar on non-alcoholic fatty liver disease in patients with diabetic dyslipidemia: A randomised controlled open label trial.** (Dr. K. S. Lakshmi), Department of Pharmacy, SRM University, Kattankulathur, Chennai.

Physiotherapy

1. Vadivelan, K. **Effect of caregiver burden on quality of care of children with cerebral palsy: A mixed method study.** (Dr. B. Amutha), Department of Physiotherapy, SRM University, Kattankulathur, Chennai.

PHYSICAL SCIENCES

Biotechnology

1. Ramesh, N. **Development of magnetic polymeric composite as an efficient nanosorbent for organic and inorganic contaminants removal from wastewater.** (Dr. V Vinoth Kumar), Department of Biotechnology, SRM University, Kattankulathur, Chennai.

Chemistry

1. Sambhaji, Ghule Siddharth. **Computational development of the strategies to explore molecular machines and the molecular space for desired properties using machine learning.** (Dr. Kumar Vanka), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Abisharani, J.M. **A study on bio-based electrode and electrolyte materials for dyesensitized solar cells application.** (Dr. S. Devikala), Department of Chemistry, SRM University, Kattankulathur, Chennai.

3. Alam, Mulani Fayaj. **Establishment of structure-fragment-relationships of neem (*Azadirachta indica*) limonoids by tandem mass spectrometry, based on the isolation, structural modifications and isotope labeling along with its application.** (Dr. H V Thulasiram), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

4. Dhanaji, Aher Jagadish. **Conjugated carbonyl molecules for lithium ion batteries.** (Dr. K. Krishnamoorthy), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

5. Dinesh Kumar, R. **Lewis (BRØNSTED) acid catalyzed synthesis of heterocyclic compounds using carbon synthon strategy.** (Dr. S. Devikala), Department of Chemistry, SRM University, Kattankulathur, Chennai.

6. Eswaremoorthi, T. **Development of metal based electrode material for energy storage application.** (Dr. S. Ganesan), Department of Chemistry, SRM University, Kattankulathur, Chennai.

7. Gupta, Aniket. **Development of novel catalytic approaches towards the proximal-selective functionalization of selected organic building blocks.** (Dr. Sukalyan Bhadra), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

8. Kanagavalli, P. **Chemically interplayed graphene-based label-free sensor platform for dengue diagnosis and therapeutics.** (Dr. Veerapandian. Murugan), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

9. Kumaraguru, S. **Metal oxide anode materials for electrochemical energy storage in rechargeable lithium-ion batteries application.** (Dr. Sundaravadivel E), Department of Chemistry, SRM University, Kattankulathur, Chennai.

10. Manpreet Singh. **Modular construction and functionalization of porous crystalline frameworks for gas adsorption, sustainable catalysis and luminescent sensing.** (Dr. Subhadip Neogi), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

11. Marathe, Deepak Milind. **Study on phytotreatment of moderately saline wastewater using plant-derived filter bedding materials and its impact on soil and plant growth.** (Dr. Kanchan Kumari), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

12. Marimuthu, M. **Design of highly efficient electrode materials for supercapacitor and as embedding with selfenergy generator.** (Dr. S. Ganesan), Department of Chemistry, SRM University, Kattankulathur, Chennai.

13. Praveena, N M. **Structure and morphology development during stereocomplex formation in polylactides.** (Dr. Bhoje Gowd E), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

14. Rajitha, Paka. **Studies on supported metal oxide catalysts for ammoxidation of halogenated methyl aromatic compounds.** (Dr. Nagarapu Lingaiah), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

15. Ramu, S. **Metal free synthesis of aromatic heterocycles and biological evaluation of heterocyclic hybrid molecules.** (Dr. B. Baskar), Department of Chemistry, SRM University, Kattankulathur, Chennai.

16. Sankar, V. **C-N and C-C bond formation reactions through oxidative cyclization and borrowing hydrogen strategy.** (Dr. Srinivasan B), Department of Chemistry, SRM University, Kattankulathur, Chennai.

17. Santhosh, K. **Synthesis of organic molecules and their application in dye-sensitized solar cells for conversion of solar energy into electricity.** (Dr. S. Ganesan), Department of Chemistry, SRM University, Kattankulathur, Chennai.

18. Verma, Narsingh. **Semisynthetic modification of natural products through C-C and C-hetero (N, O, S) bond formation and their biological evaluation.** (Dr. Arvind Singh Negi), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

19. Vinita. **Earth-abundant metal catalyzed C-C and C-N bond forming reactions using alcohols to access olefin and indole scaffolds.** (Dr. Santosh B Mhaske), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Nanotechnology

1. Sankar, Ganesh R. **Metal doped ZnO nanostructures for enhanced gas sensing at different temperatures.** (Dr. S. Ponnusamy), Department of Nanotechnology, SRM University, Kattankulathur, Chennai.

2. Shalini, V. **Investigation of thermoelectric properties of polymer-carbon based nanocomposites for wearable thermoelectric generators.** (Dr. M. Navaneethan), Department of Nanotechnology, SRM University, Kattankulathur, Chennai.

3. Vivekanantha, M. **Development of high energy density Li-Rich cathodes for lithium-ion battery application.** (Dr. K. Kamala Bharathi), Department of Nanotechnology, SRM University, Kattankulathur, Chennai.

Physics

1. Abinaya, R. **Interface-engineering of layered MoS₂ nanostructures for thermoelectric applications.** (Dr. J Archana), Department of Physics, SRM University, Kattankulathur, Chennai.

2. Venkatesan, J. **Investigation on photocatalytic properties of metal oxide and g-C₃N₄-based heterostructures for model organic pollutants removal.** (Dr. Alagiri M), Department of Physics, SRM University, Kattankulathur, Chennai. □

**Rajaram Shikshan Sanstha, Ashta
Vilasrao Shinde Mahavidyalaya, Ashta
Dudhgaon Road, Ashta,
Tal. Walwa, Dist. Sangli (Maharashtra)
(Affiliated to Shivaji University, Kolhapur)
(Permanent Non-Grant)**

WANTED

Applications are invited from eligible candidates for the following post:-

Sr. No.	Name of Post	Vacant Post	Unreserved (Open) Post
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Note : For detailed information about post, qualifications and other terms and conditions, please visit University website : www.unishivaji.ac.in.

**Place : Ashta
Date : 02/01/2023**

**Chairman
Rajaram Shikshan Sanstha,
Ashta, Tal. Walwa, Dist. Sangli**

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(Permanently Non-Grantable)**

WANTED

Applications are invited from eligible candidates for the following posts:-

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A.	Associate Professor	04	02	1-SC, 1 - VJA
B.	Assistant Professor	07	03	1-SC, 1 - VJA, 1- OBC, 1- EWS

Note: For detailed information about posts, qualifications and other terms and conditions, please visit University website: www.unishivaji.ac.in.

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Date:**

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Tal. Karveer, Dist. Kolhapur Tal. Karveer, Dist. Kolhapur**



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School of Life Science & Biotechnology (SOLB) • Biotechnology • Microbiology • Biochemistry	School of Medical Sciences (SOMS) • Pharmaceutical Technology • Allied Health Sciences	School of Law & Justice (SOLJ) • Constitutional Law • Corporate Law • Criminal Law • International Law • Energy Law • Cyber Law • Intellectual Property Law
School of Smart Agriculture (SOSA) • Agriculture	School of Engineering & Technology (SOET) • Computer Science & Engineering • Computer Applications • Mechanical Engineering	School of Business & Economics (SOBE) • General Management • Accounting & Commerce • Economics & Finance • Operations & Supply Chain Management • Business Analytics • OB & HRM • Quantitative Methods
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(Affiliated to Shivaji University, Kolhapur)
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WANTED

Applications are invited from eligible candidate for the following post:-

Sr. No.	Designation	Vacant Post	Reserved (Open) Post
A	Principal	01	01

NOTE: For the detailed information about posts, qualifications and other terms as conditions, please visit University Website: www.unishivaji.ac.in.

Place: Kundal
Date:

**President
Gandhi Education Society,
Kundal, Tal. Palus, Dist. Sangli**



संत लॉगोवाल अभियांत्रिकी एवं प्रौद्योगिकी संस्थान
(भारत सरकार के अधीन सम विश्वविद्यालय)
Sant Longowal Institute of Engineering and Technology
(Deemed-to-be-University; Established by Government of India)
Longowal-148106, Distt. Sangrur, Punjab

Ph.D. admissions for Academic Session- (2022- 23)

Online applications are invited for Ph.D. admissions

- Full Time Ph. D. program with institute fellowship for the candidates who have qualified GATE/NET during the last 5 years in Engineering/Technology/Sciences/ Humanities & Management. Seats are also available for Full-time scholars without fellowship and part-time scholars.
- Engagement as Research Assistant @ Rs. 25000.00 per month, eligible to be enrolled for Ph.D. degree, for the candidates who have qualified GATE/NET during the last 5 years.
- Full Time Ph.D. program under AICTE Doctoral Fellowship (ADF) scheme.
- Full-time Ph.D. program Under Visvesvaraya Ph.D. scheme for Electronics and IT: Phase-II.

For details please visit institute website www.sliet.ac.in

For registration, please visit:

**Login | Sant Longowal Institute of Engineering and Technology,
Longowal - 148106 (slietexam.co.in)**

Important Dates

Starting date for submission of online applications	:	20/12/2022
Closing date for submission of online applications	:	10/01/2023
Date of Online/Offline Interviews	:	12/01/2023

All UG Programmes are NBA accredited (www.sliet.ac.in)

Director

**Jai Jawan Jai Kisan Shikshan Prasarak Mandal,
Kandhar's**

**Kandhar College of Pharmacy (B.Pharm)
Balantwadi Post, Ghodaj, Tq. Kandhar,
Dist. Nanded-431714 (M.S.)**

(Approved by PCI, AICTE, DTE Mumbai, Govt. of
Maharashtra, Affiliated to SRTMU, Nanded)

Application are invited from eligible candidates for Kandhar College of Pharmacy, Balantwadi (**Permanent Non-Granted**) run by Jai Jawan Jai Kisan Shikshan Prasarak Mandal, Kandhar, Tq. Kandhar, Dist. Nanded-431714 (Maharashtra) for the following Posts:-

Sr. No	Name of the Post (Designation)	No. of posts	Reservation
1	Professor	04	OPEN -02, SC-01, OBC-01
2	Associate Professor	05	OPEN -02, SC-01, VJ (A)-01, OBC-01
3	Assistant Professor	09	OPEN -03, SC-01, ST-01, VJ (A) -01, OBC-02, EWS-01

Note : For details information about Post, Qualification and other terms and conditions, please visit University website : www.srtmun.ac.in.

**Secretary
J.J.J.K.S.P.M, Kandhar**

ATTENTION ADVERTISERS

Advertisers are requested to send their text matter at following Email IDs:

1. advttun@aiu.ac.in

2. publicationsales@aiu.ac.in

Text matter may be sent in MS-Word document file OR in PDF file in original (as per Mechanical Data/Size of the Advertisement).

All the correspondence may be addressed to the **Under Secretary (Publication & Sales)**, Association of Indian Universities, AIU House, 16 Comrade Indrajeet Gupta Marg, New Delhi-110002.

Mob: 09818621761

Phone Office: 91-11-23230059, Extn. 208/213.

Sant Gajanan Maharaj Rural Hospital & Research Center's
Sant Gajanan Maharaj College of Pharmacy, Mahagaon
 Site - Chinchewadi, Gadhinglaj-Halkarni Road,
 Tal. Gadhinglaj, Dist. Kolhapur- 416 503 (Maharashtra)
 (Affiliated to Shivaji University, Kolhapur)

WANTED

Applications are invited from eligible candidates for the following posts:-

B.PHARMACY				
Sr. No.	Designation	Total Post	Open Post	Reserved Posts
A Professor				
1	Pharmaceutical Analysis	01 FT	1	----
B Associate Professor				
1	Pharmaceutical Chemistry	01 FT	1	----
2	Pharmaceutics	01 FT	1	----
3	Pharmacology	01 FT	1	----
4	Pharmacognosy	01 FT	1	----
C Assistant Professor				
1	Pharmaceutical Chemistry	04 FT	1(01)*	1-SC , 1- VJ A
2	Pharmaceutical Analysis	1 FT	1	----
3	Pharmaceutics	5 FT	2	1-SC, 1- VJ, 1- OBC
4	Pharmacology	3 FT	1	1-SC, 1- VJ A
5	Pharmacognosy	1 FT	1	----
M.PHARMACY				
A Professor				
1	Pharmaceutics	01 FT	1	----
2	Quality Assurance	01 FT	1	----

Note: For detailed information about posts, qualifications and other terms and conditions, please visit University website : www.unishivaji.ac.in

Principal

Secretary

President



V. M. SALGAOCAR INSTITUTE
of
INTERNATIONAL HOSPITALITY EDUCATION

Manora-Raia, Goa

REQUIRES

(1) PRINCIPAL

(2) ASSISTANT PROFESSORS

(a) Food Production (b) Bakery and Pastry (c) Microbiology (Food Science) (d) Food & Beverage Service (e) Rooms Division (f) English (g) Computer Application (h) General Management

(3) DIRECTOR OF PHYSICAL EDUCATION AND SPORTS

For eligibility to the above mentioned positions, kindly refer to Goa University Statutes SC-16 from the given link for relevant information.

https://www.unigoa.ac.in/uploads/config_docs/20221111.104815~Statutes 11-11-2022.pdf

All the above posts are subject to sufficient workload and approval of Goa University. Pay scale and Rules & Regulations applicable, as per statutes of Goa University and Govt. of Goa

Applications with detailed CV, 2 recent passport size photographs, copies of certificates and mark sheets, should be sent in an envelope superscribed with the post applied for within 20 days from the date of this advertisement to **The Director, V. M. Salgaocar Institute of International Hospitality Education, Manora-Raia, Salcete, Goa 403720.**



**Education Society Naigoan's
Sharadchandra Arts, Commerce & Science College, Naigoan (Bz.)**

Tq. Naigoan, (Kh.), Dist. Nanded – 431 709

NAAC Accredited 'B' Grade

Affiliated to Swami Ramanand Teerth Marathwada University, Nanded



APPOINTMENTS

Applications are invited from eligible candidates for the following granted posts. Qualified candidates should **apply within 15 days** from the date of this publication of the advertisement and send to **The Principal, Sharadchandra Arts, Commerce & Science College, Naigoan (Bz.), Dist. Nanded - 431709.**

Sr. No	Subject	Name of The Posts	Number of Posts	Reservation
1	Political Science	Assistant Professor	01	Open-2,
2	English	Assistant Professor	01	SC-1,
3	History	Assistant Professor	01	ST-1,
4	Economics	Assistant Professor	02	NT-B-1,
5	Chemistry	Assistant Professor	02	NT- C-1,
6	Physics	Assistant Professor	01	OBC- 3,
7	Botany	Assistant Professor	01	EWS-1.
8	Mathematics	Assistant Professor	01	

Permission as per NOC No.: **JDHE Nanded/NOC/2019/5, Dated 02.12.2022.**

Educational Qualification and Pay Scale:

(1) Educational qualification, Pay Scale and allowances for the post of Assistant Professor will be as per norms of UGC, Govt. of Maharashtra and Swami Ramanand Teerth Marathwada University, Nanded. (2) Candidates belonging to the reserved categories should also send one copy of their application by the Speed Post to **"The Assistant Registrar, Special Cell, Swami Ramanand Teerth Marathwada University, Nanded.** (3) Eligible candidates who are already in services should submit their applications through proper channel. (4) All attested Xerox copies of certificates and other relevant documents should be attached with the application. (5) No T.A and D.A will be paid to the candidates.

Details of advertisement & Application format are available on www.srtmun.ac.in.

Note : The vacancies of Assistant Professors will be filled-in subject to condition of the decision in Writ Petition No.12051/2015 pending in Hon'ble High Court Bombay, Bench at Aurangabad.

Correspondance Address:

Education Society Naigoan's
Sharadchandra Arts, Commerce & Science College, Naigoan (Bz.)
Tq. Naigoan (Kh.), Dist. Nanded – 431709.

ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM, KOCHI-682011

website : www.teresas.ac.in

TEL.0484-2351870, 2381312, Email : principal@teresas.ac.in

Wanted Assistant Professors

Applications are invited from eligible candidates to the following Assistant Professor posts in St. Teresa's College (Autonomous), Ernakulam against permanent vacancies. 3 vacancies are reserved for persons with benchmark disabilities mentioned in clause 34 of the Right of persons with Disability Act 2016 and G.O. (MS) No. 96/2021/HEdn. 15.02.2021. Scale of Pay, Qualification, Age etc. will be as per the norms of UGC/ University/Government of Kerala . Application form can be downloaded from the College **website (www.teresas.ac.in)** on an online payment of Rs. 2000/-. Duly filled application along with copies of all the required documents should reach the Principal **within 30 days** from the publication of this notification.

SUBJECT	NO. OF POSTS	OPEN QUOTA	COMMUNITY QUOTA	PERSON WITH DISABILITY QUOTA-(VISUAL/HEARING IMPAIRMENT)
CHEMISTRY	4	3	0	1
BOTANY	1	1	0	0
ENGLISH	1	0	0	1
MATHEMATICS	1	0	0	1

Sd/-
Manager

**Chh. Shahu Institute of Business Education & Research Trust's (SIBER)
V.P. Institute of Management Studies and Research, Sangli
Sangli, Miraj Road, Wanlesswadi, Sangli – 416 414 (Maharashtra)
(Affiliated to Shivaji University, Kolhapur)
(Non-Grant)**

WANTED

Applications are invited from eligible candidates for the following posts:-

Sr. No.	Name of the Post	Total Posts	Open Posts	Reserved Category Posts
P.G. Teachers				
A	Professor (MCA)			
1.	Computer Applications	01	01	--
B	Associate Professor (MCA)			
1.	Computer Applications	01	01	--
C	Assistant Professor (MBA)			
1.	Financial Management	01	01	--
2.	H. R. Management	01	01	--
3.	System Management	01	01	--
D	Assistant Professor (M.Com)			
1	Commerce (Accountancy)	02	01	01 (SC)
U.G. Teachers				
A	Assistant Professor			
1	Commerce & Management	03	01	01 (SC)*, 01 (VJ –A)
2	Computer Applications	03	01	01 (SC)*, 01 (VJ-A)
E	Librarian	01	01	--
F	Director of Physical Education	01	01	--

Note: For detailed information about posts, qualifications and other terms and conditions, please visit university website: www.unishivaji.ac.in.

*Out of sanction (Commerce & Management) posts three, one post is already filled from Reserved Category.

Place: Sangli

Date: 22.12.2022

Secretary
Chh. Shahu Institute of Business
Education & Research Center,
University Road, Kolhapur 416 004

**Disha Bahuddeshiya Sevabhavi Sanstha, Jalna (M.S.)
DISHA COLLEGE OF SOCIAL WORK
Kumbefal - Shendra, Tq. Dist. Aurangabad (Minority Institute)**

WANTED

Applications are invited in our college, from the eligible candidates for various Teaching & Non-Teaching posts as described below, on (Permanent non-grant basis). The hard copy of application along with all relevant documents should reach us **within 10 days** from the date of this advertisement to the **Chairman/Secretary, Disha Bahuddeshiya Sevabhavi Sanstha's C/O Disha College of Social Work, Shendra Premises, Aurangabad (M.S.) – 431 007** or **E-mail us: dswcollege22@gmail.com**.

Sr. No.	Post/ Subjects	No. of Posts	Sr. No.	Post Subjects	No. of Posts
Non-Teaching			Assistant Professor/Teacher for UG/PG (M.S.W. & B.S.W.)		
01	Principal	01	11	Assistant Professor (Social Work)	09
02	Librarian	01	12	Assistant Professor (Hindi)	01
03	Office Superintendent	01	13	Assistant Professor (Marathi)	01
04	Accountant	01	14	Assistant Professor (English)	01
05	Clerk	02	15	Physical Director	01
06	Paharekari (Watchman)	03			
07	Gardner	01			
08	Vehicle Driver	01			
09	Peon	02			
10	Sweeper	01			

- Educational Qualifications, Pay Scale, service conditions & recruitment for the above subject are as per the norms of UGC, Dr. B.A.M.U., Aurangabad and Govt. of Maharashtra.

**Chairman
Smt. S. B. Borde**

**Vice President
Dr. Meena Suryawanshi**



Jijamata Bahu-Uddyashiya Shikshan Prasarak Mandal, Patoda (Bk.)

Sambhajirao Kendre Mahavidyalaya, Jalkot,

Tq. Jalkot, Dist. Latur

(Art's, Commerce & Science)

Affiliated to Swami Ramanand Teerth Marathwada University, Nanded. NAAC Grade "B"

Email: skmj2001@rediffmail.com • Web.: skmjalkot.org • Ph. No. 02385 – 276130

WANTED

Applications are invited from the eligible candidates for the following posts in **Sambhajirao Kendre Mahavidyalaya, Jalkot, Tq. Jalkot, Dist. Latur** (Granted) run by **Jijamata Bahu-Uddyashiya Shikshan Prasarak Mandal Patoda (Bk.)**. The applications duly completed should reach the following address **within 15 days** from the date of advertisement. The candidates of reserve category should submit one copy of their application to the Assistant Registrar, Special Cell, Swami Ramanand Teerth Marathwada University, Nanded.

Sr. No.	Subject	Name of Post (Designation)	No. of Post	Reservation
1	Zoology	Asst. Professor	01	Open-02,
2	Botany	Asst. Professor	01	SC-01,
3	Physics	Asst. Professor	01	ST-01,
4	Mathematics	Asst. Professor	01	NT(C)-01,
5	Fishery Science	Asst. Professor	01	OBC-03,
6	Psychology	Asst. Professor	01	EWS-01
7	Commerce	Asst. Professor	01	
8	Chemistry	Asst. Professor	01	
9	Geology	Asst. Professor	01	
Total			09	

Permission as per NOC No. : JDHE Nanded/NOC/2019/6 Dt. 13/12/2022.

Educational Qualification :

1. Minimum educational qualification for the Post of Assistant Professor will be as per Regulations of UGC (2018), G.R. of Govt. of Maharashtra Dt. 08 March 2019.
2. A Master's degree with 55% marks (or an equivalent grade in a point-scale wherever the grading system is followed) in a concerned/relevant/allied subject from an Indian University, or an equivalent degree from an accredited foreign university.
3. Besides fulfilling the above qualifications, the candidate must have cleared the National Eligibility Test (NET) conducted by the UGC or the CSIR, or a similar test accredited by the UGC, like SET or who are or have been awarded a Ph. D. Degree in accordance with the University Grants Commission (Minimum Standards and Procedure for Award of M.Phil./ Ph.D. Degree) Regulations, 2009 or 2016 and their amendments from time to time as the case may be exempted from NET/SET:

Provided the candidates registered for the Ph.D. programme prior to July 11, 2009, shall be governed by the provisions of the then existing Ordinances / Bye-laws/Regulations of the Institution awarding the degree and such Ph.D. candidates shall be exempted from the requirement of NET/ SET for recruitment and appointment of Assistant Professor or equivalent positions in Universities/Colleges/Institutions subject to the fulfillment of the following conditions:

- a) The Ph.D. degree of the candidate has been awarded in regular mode only;
- b) The Ph.D. thesis has been evaluated by at least two examiners;
- c) An open Ph.D. viva voce of the candidate has been conducted;
- d) The candidate has published two research papers from his/her Ph.D. work, out of which at least one is in a refereed journal; and
- e) The candidate has presented at least two papers, based on his/her Ph.D. work in conferences/seminars, sponsored/ funded/supported by the UGC/ICSSR/CSIR or any similar agency.

Note :

- 1) The fulfillment of these conditions is to be certified by the Registrar or the Dean (Academic Affairs) of the University concerned.)
- 2) NET/SET shall also not be required for such Masters Programmes in disciplines for which NET/SET is not conducted. However, Ph.D. degree shall remain the minimum eligibility for appointment of Assistant Professor in such disciplines.

(cont'd. to page 41)

OR

B.

The Ph.D. degree has been obtained from a foreign university/institution with a ranking among top 500 in the World University Ranking (at any time) by any one of the following:

- (i) Quacquarelli Symonds (QS);
- (ii) the Times Higher Education (THE) or
- (iii) the Academic Ranking of World Universities (ARWU) of the Shanghai

Note : *The Academic score as specified in Appendix II (Table 3A) for Universities, and Appendix II (Table 3B) for Colleges, shall be considered for short-listing of the candidates for interview only, and the selections shall be based only on the performance in the interview.*

Salary & Allowances : Pay Scale as per UGC, State Govt. & S.R.T.M. University, Nanded rules form time to time.

Note :

1. Prescribed application form is available on the University **website : www.srtmun.ac.in.**
2. No. T.A. / D.A. will be paid to attend the interview.
3. Eligible candidates those who are already in service should submit their applications through proper channel.
4. All attested Xerox copies of certificates & other relevant documents should be attached with the application form.
5. According to Govt. rules, 30% and 3% seats will be reserved for women and differently-abled persons respectively.
6. Relaxation of 5% marks at P.G. level for SC/ST candidates only.
7. The vacancies of Assistant Professors will be filled subject to condition of the decision in Writ Petition No.12051/2015 pending in Hon'ble High Court of Judicature of Bombay, Bench at Aurangabad.

Address for Correspondence :

The Principal

Sambhajirao Kendre Mahavidyalaya, Jalkot

Tq. Jalkot, Dist. Latur – 413 532 (Maharashtra)

Sd/-
Dr. B. M. Kendre
President

Sd/-
Dr. B. T. Lahane
Principal



**SHREE RAYESHWAR INSTITUTE OF
ENGINEERING & INFORMATION TECHNOLOGY**

Shivshail' Karai, Shiroda, Goa 403 103

APPOINTMENTS

Advt. No. SES/SRIEIT/APPT/01/23

Applications are invited from the eligible candidates in the prescribed form available on Institute's **website www: ritgoa.ac.in** for the following posts to be filled on Regular & Contract basis.

Name of Post & Pay band	Electronics & Telecom. Engg.	Computer Engineering	Information Technology	Mechanical Engineering	Engg. Sc. & Humanities			
					Maths	Physics	Chemistry	Comm. Skill
Principal (37400-67000 AGP 10000)				01				
Professor (37400-67000 AGP 10000)	01	--	01	01	--	--	--	--
Associate Professor (37400-67000 AGP 9000)	02	02	02	02	01	--	--	--
Assistant Professor (15600-39100 AGP 6000)	02	02	04	05	02	01	01	01
College Director of Physical Education & Sports (15600-39100 AGP 6000)				01				

Eligibility & Qualifications:

- A. Essential Qualification & Experience for appointment of Principal / Professor(s) / Associate Professor(s)/ Assistant Professor(s)/ College Director of Physical Education & Sports must be as per the AICTE and Goa University Norms.
 - B. A minimum score as stipulated in the Academic Performance Indicator (API) based Performance Based Appraisal System (PBAS), set out for recruitment of Principal, Professor and Associate Professor by Goa University.
- In the event of candidates for the post of Professor and Associate Professor are not available and/or not found suitable, the advertised posts shall be filled at level of **Assistant Professor** on contract basis.

Detailed information about eligibility, qualification, experience, terms & conditions is available in college **website: www.ritgoa.ac.in**. Candidate may download Application Form and General Instructions from college website. Filled application along with attested copies of testimonials, certificates should reach to the Administrative Office of the Institute or email soft copies of filled applications with enclosures to **principal.ritgoa@gmail.com**. **within 15 days** from the date of publication of this advertisement. Incomplete Application and/or application without enclosures will not be accepted and rejected without giving any notice.

Secretary

Announcement

Themes for Forthcoming Special Issues of the University News

Special Numbers of the University News being brought out on the occasion of AIU Zonal Vice Chancellors' Meets during November, 2022—March, 2023 are on the following themes:

1. ***Research & Excellence for Transformative Higher Education*** to be published on January 30, 2023 on the occasion of South Zone Vice Chancellors' Meet to be held at Andhra University, Visakhapatnam, Andhra Pradesh. Last date for receipt of Article is **January 15, 2023**.
2. ***Evaluation Reforms for Transformative Higher Education*** to be published on February 20, 2023 on the occasion of West Zone Vice Chancellors' Meet to be held at Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra. Last date for receipt of Article is **February 10, 2023**.
3. Special Issue on the theme '**Transformative Higher Education for *Atma Nirbhar Bharat***' will be brought out in the month of March, 2023. Last date for receipt of Article is **February 20, 2023**.

Guidelines for Contributors and Editorial Policies

To submit the manuscripts for publication, the contributor need to follow the guidelines given below:

- Articles submitted for the Journal should be original contributions and should not be under consideration for any other publication at the same time. A declaration is to be made by the author in the covering letter that the paper is original and has not been published or submitted for publication elsewhere.
- Manuscripts including tables, figures and references should be around 3000-4000 words for articles, 2000 – 5000 words for Convocation Addresses, 1000 words for Book Reviews and 600 words for Communications.
- All the manuscripts should typed in double-space with 12 point font and ample margin on all sides on A 4 size paper.
- The cover page should contain the title of the paper, author's name, designation, official address, address for correspondence, contact phone/mobile numbers and e-mail address.
- The main text should not contain footnotes. References should be given at the end of the manuscript and should contain only those cited in the text of the manuscript. The full reference should be listed at the end in alphabetical order running the following style:

(cont'd. to page 43)

Book

Miles, M., and Huberman, M.,(1994). *Qualitative Data Analysis*. London : Sage.

Articles

Over, R.(1982). Does research productivity decline with age?
Higher Education, 11, 511-20.

Chapter in a Book

Rendel, M. (1986). How many women academics 1912-1977? In R. Deem (ed.), *Schooling for Women's Work*. London: Routledge.

Article Retrieved from Website

Mazumdar, T (Year, Month, Date Published). *Article Title*. Retrieved from URL.

- Authors are responsible for any copyright clearance, factual inaccuracies and opinions expressed in their paper.
- No fees is payable to submit or publish in this Journal.

Editorial Policies

- The final decision on the acceptance or otherwise of the article rests with the Editorial Committee and it depends entirely on its standard and relevance. The title and content of the article accepted may be modified to meet the journal's standards of contents, presentation, style and other specific requirement. Authors may also be requested to revise their manuscripts before they can be accepted for publication. Correspondence in this regard will be done with the first named author unless otherwise indicated.
- Maximum time taken for processing the article is six months. Contributors are free to send the material to any other publication after a period of six months from the date of their submitting the article to the University News, if they do not receive any intimation from AIU. Author will receive two complementary copies of the Journal immediately after its publication
- AIU may re-use the articles published in the University News for its various publications.
- AIU may extend courtesy to other journals or websites to use the articles published in the University News if due credit is given to the author(s) of the article(s) and the University News. Only those manuscripts will be published which are sent through E-mail: *ramapani.universitynews@gmail.com* and *universitynews@aiu.ac.in* to:

Dr. S Rama Devi Pani

Editor

University News

Association of Indian Universities

AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg), New Delhi-110 002

**SANGOLA TALUKA SHETKARI SHIKSHAN PRASARAK MANDAL, SANGOLA'S
VIDNYAN MAHAVIDYALAYA, SANGOLA**

Tal. Sangola, Dist. Solapur (Maharashtra)

(Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

NON-MINORITY

AIDED

Applications are invited for the Post of **PRINCIPAL** from the Academic Year 2022-23:-

Sr. No.	Subject Designation	Total Vacant Post
1)	Principal	01

- 1) The above post is open to all, however, candidates from any category can apply for the post.
- 2) Educational Qualification and other requirements are as prescribed by the UGC Notification dated 18th July, 2018, Govt. of Maharashtra Resolution No. Misc-2018/C.R.56/18UNI-1 dated 8th March, 2019 and University Circular No. PAHSUS/Estt/7th Pay/2019/2285/dated 25th March, 2019.
- 3) Candidates should submit their Academic Research Score (Academic Performance Indicator) report with related documents. (Only for the post of Principal).
- 4) A relaxation of 5% shall be allowed at the Bachelors as well as at the Masters Level for the candidates belonging to SC/ST/OBC (Non-Creamy Layer)/ Differently-abled for the purpose of eligibility and assessing good academic record for direct recruitment.
- 5) Reserved candidates, who are domiciled out of Maharashtra State, will be treated as Open Category candidates.
- 6) Reserved candidates should also to send a copy of their application to the Deputy Registrar, Special Cell, Punyashlok Ahilyadevi Holkar Solapur University, Solapur.
- 7) Application received after the last date will not be considered. The College will not be responsible for postal delay, if any.
- 8) Reservation for women and disable persons will be as per the Govt. norms.
- 9) Reserved category candidates shall produce the Caste Validity Certificate as per the directives issued by the State Government vide Circular No.BCC-201/Pra. Kra. 1064/2011/16B dated 12-12-2011.
- 10) Reserved category candidates (except SC/ST) shall produce Non-Creamy Layer Certificate at the time of interview.
- 11) Applicants who are in service must send their application through proper channel.
- 12) Applicants are required to account for breaks, if any, in their academic career.
- 13) Incomplete application will not be entertained.
- 14) T.A., D.A. will not be paid for attending the interview.
- 15) Applications with full details should reach to the Secretary, Sangola Taluka Shetkari Shikshan Prasarak Mandal, Sangola **within 30 days** from the date of publication of this advertisement. Incomplete applications will not be entertained.
- 16) **This is University approved advertisement.**

Place : Sangola

Date : 27.12.2022

Secretary

Sangola Taluka Shetkari Shikshan Prasarak Mandal,
Sangola's Vidnyan Mahavidyalaya, Sangola,
Tal. Sangola, Dist. Solapur (Maharashtra)