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AIU Invites Proposals for Organizing Roundtables of Newly Appointed Vice Chancellors in the Session 2024-25

The Association of Indian Universities, an apex-level representative organization of universities and other Higher Education Institutions, invites proposals from Member Universities/Institutions for collaboration in organizing the **two Roundtables of Newly Appointed Vice Chancellors** in the current financial year ending on March 31, 2025.

Two Roundtables of two days each are to be scheduled between November 2024 to February 2025 with a gap of at least 2 months in two different Universities.

The Vice Chancellors/Directors of Member Universities/Institutions of AIU are invited to send proposals to collaborate with AIU in organizing the Roundtables. The Proposal duly signed/endorsed by the Vice Chancellor/Director should contain (i) an Expression of Interest (ii). Financial Estimates; (iii). Two sets of dates for convening the Roundtables latest by **October 30th, 2024,** to the following:

Dr Sistla Rama Devi Pani
Head, Research Division
Association of Indian Universities
AIU House, 16 Comd. Indrajit Gupta Marg New Delhi – 110 002
E-mail: *researchaiu@gmail.com*

The allocation of the event to the university will be a prerogative of the AIU and will be based on terms and conditions as laid down by AIU. It will be organised on mutually consented dates. For any further query please contact on 011- 23230059, Extn-202/240/220, Fax No: 011-23239325, E-mail: *researchaiu@gmail.com.*

N.B.: i. AIU is not a Funding Organisation.

ii. The Roundtables are AIU activities conducted under the banner of AIU for which collaboration from member universities/institutions is solicited. Collaborating University will host the Roundtable.

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The Concept of Cluster Colleges and the Importance of Collaboration

M S Kurhade*

"In my mind, teaching is not merely a life work, a profession, an occupation or a struggle, but a passion. I love to teach as a painter loves to paint, as a musician loves to play, as a singer loves to sing, and as a strong man rejoices to run a race".

–William Lyon (1970).

The article aims to look at issues related to university and college planning and management for both short-term and long term. The concept of university and college planning and management envisages the involvement of university authorities and principals, faculty, administrative staff, students, parents, management of the private education society, and government, considering the constraints to identify the difficulties in taking corrective measures. It is a fact that anything done in a systematic manner and as per the prescribed norms yields much better results rather than something done haphazardly.

The idea of the developmental plan for a university and college envisages a perspective plan prepared by an expert committee to provide educational facilities to the learners, faculty and administrative staff and provision of required resources to improve the skill and knowledge of the learners. Kothari Commission (1964-66) said that "No comprehensive programme of educational development can ever be put across unless it involves every factor connected with it – its teacher, students and local community." It means decentralising college planning and management at the college level forms a strong base for quality education and permits the active participation of all stakeholders.

A compressive perspective plan of the college's inconsonance with the University Perspective Plan for 5/10 years ensuring the required facilities for the academic and administrative progress of the college helps academic, administrative and infrastructural growth, and enables colleges to foster excellence in curricular, co-curricular and extracurricular activities.

A university and college are vital nodes in society, and the youth who enter these portals as learners today will be the builders of the nation tomorrow. A university and college are both busy hubs of activities, a training camp for the future and, at the same time, a microcosm of the wider life outside the precincts of the campus. Keeping all these definitions of a university and college in mind, the planning and management help a tangible vision of the university and

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college for a long period and help chart its positive growth in the most suitable direction for its learners, its *alma mater* and its academia. "The value of a college education is not the learning of many facts but the training of the mind to think"- Albert Einstein (1879 -1955).

The planning and management are the collective responsibility of all stakeholders involved in the university and colleges. Major aspects of traditional wisdom of establishing universities and colleges have been thoughtfully integrated into the planning and execution, to keep it beneficial for the success of the overall planning without conflicting with other planning principles. From master planning to architecture, the entire college campus planning is expected to be done keeping in mind that it is to be presented as a high-rated college. Education imparted in universities and colleges must not be as merely a preparation for gaining a degree or employment but as a continuous development of the mind. The colleges and universities can give us only the intellectual, mental and emotional base, the rest depends upon our absorption and interpretation of various experiences of our life. Therefore, education is a lifelong process. The task of universities and colleges is to clarify students' ideas, which will make them to be worthy to lead their lives happily and peacefully.

Planning and Management of universities and colleges are based on: –

1. The realization of the importance of involving all concerned in the planning and implementation process.
2. Identifying HEI's and stakeholders' needs for formulating projects and programmes that lead towards community development.
3. Understanding education as a unique investment in the present and future.
4. Education develops manpower for different levels of the economy.
5. Estimate costs of expansion programmes and improvement.
6. Determining the priorities and working out alternatives in the light of assessed resources and future needs.
7. Time frame for implementation of the perspective plan.
8. Methods of monitoring and evaluation of the undertaken projects.
9. Need and justification for the necessary changes in the university and college projects.
10. Suggestions given by the stakeholders for improvement.
11. Identification and correction of the deficiencies in each section/ unit/ department.
12. Take stock of the available physical facilities, courses, programmes etc.
13. Availability of the required faculty and administrative staff.
14. Assessment of financial resources likely to be available from government, UGC, and non-government organizations.
15. Utilization of human and material resources.

In his lectures on the subject of "The Future of India", Swami Vivekananda 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, and assimilation of ideas. If you have assimilated five ideas and made them your life and character, you have more education than any man who has got by heart a whole library. The donkey carrying its load of sandalwood knows only the weight and not the value of the sandalwood. If education is identical with information the libraries are the greatest sages in the world, and encyclopedias are the *Rishis"*. It means the object of education has always been the emancipation of mind by developing it. Dr. S. Radhakrishnan aptly said that the aim of education in India has been the initiation into the higher life and spirit. The student is a wayfarer in spirit. Wisdom is not merely knowledge. The supreme wisdom is the result of learning (*vidya*), reflection (*dhyan)* and austerity (*tapas*).

The aim of education is not mere information gathering. Nowadays, we see that a big explosion of information is taking place. Information in large numbers is coming through different channels and directions, which is bombarding the heads and hearts of teachers and students. Therefore, universities and colleges have to find out the ways and means how to transform this mass of information into organized knowledge. Albert Einstein once said, "Imagination is more important than knowledge. For while knowledge defines all we currently know and understand, imagination points to all we might yet discover and create."

The Constitutional Amendment of 1976 which includes education in the Concurrent List, indicates the sharing of responsibility between the Central Government and the State Government in respect of financial and administrative requirements. The assumption is that the nation as a whole carries the responsibility of providing resource support for task-oriented programmes of educational transformation, reducing disparities, scientific and technological research, etc. Therefore, in higher education in general and in technical education in particular, steps in. National Education Policy –2020 (NEP–2020). It facilitates 'Cluster Colleges' mobility by sharing access to the facilities available in the neighbouring colleges. This can prove that the universal character of higher education institutions is a realization that needs to be underscored. Due to 'Cluster Colleges' and 'Cluster Universities' in the areas of research and development, and education in science and technology the strong network arrangements between different colleges to pool their resources and participate in projects of national importance. There are about 1,000 universities and more than 46,000 colleges in India today. The all-round development in these higher education institutes is possible if and only if the concept of 'Cluster Colleges' and 'Cluster Universities' is emphasized for the sharing of facilities in the existing HEIs. The system of 'Cluster Colleges' and 'Cluster Universities' will help to develop the colleges in large numbers until the affiliating system is replaced by a freer and more creative association of colleges and universities. In NEP–2020, research in science, technology, commerce, management, Indology, humanities, social sciences, legal, agricultural, medical and interdisciplinary studies etc. is encouraged. Efforts are being made to delve into *Bharatvarsha's* ancient fund of knowledge, cultural roots, and Vedic values and to relate it to contemporary reality. The introduction of the mandatory course – 'Indian Knowledge Systems' is proof to the inclusion of Ancient Indian Culture into our future generations. Establishments of linkages between the cluster colleges in art, music, archaeology, oriental studies, fine arts, applied arts, museology, classical dance, the intensive study of Pali, Sanskrit and other classical languages, philosophy, astronomy, mathematics etc. shall help to enrich the cultural content. Sir Bartle Frere, then Chancellor of the University, in the first convocation address, April 1862, the University of Mumbai said, "The first graduate of the university to disprove the unfounded belief that the Oriental intellect was worn out and that it was no longer capable of producing results of higher intellectual attainments".

'Fostering each other you shall attain to the highest good'. This has been reflected in the objective of Maharashtra Public Universities Act, 2016, Section 4 (15) of the said Act stating that to promote better interaction and coordination among different universities, institutions and colleges in the given university, other Universities in the State, in the region, in the nation and at global level by all such means generally to improve the governance of the university and facility it provides for higher education.

Adequacy and sustainability for various purposes of the 'Cluster Colleges' and 'Cluster Universities' must be as per norms laid down by the government and apex bodies of higher education. The effective functioning of the 'Cluster Colleges' and 'Cluster Universities' is based on the following factors:

1. Total student population in the cluster colleges and cluster universities.
2. Total number of faculty (Course-wise/ subject-wise/ programme-wise).
3. Working schedule of the Colleges/Universities.
4. Anticipated strength of the students likely to benefit from the common facilities available in the cluster colleges and cluster universities.
5. The need for 24/7 teaching and learning in a manner ensuring an equitable distribution of facilities as per the needs of the students' community.
6. Rich academic and co-curricular life of the students of the cluster colleges and cluster universities shall broaden the horizon of their experiences and will get a wider scope in their career.
7. In Maharashtra State maximum number of colleges belong to the private management therefore, there is a need of a Memorandum of Understanding (MoU) that in the event exchange of faculties, resources, and physical facilities, there shall not be any damage or any financial burden on any college of the cluster. The rates of fees charged to the students by the rates prescribed by the apex body from time to time. The travelling allowance of faculty involved in exchange for that is required to be borne by the parent college or cluster colleges as per the

need for the services. The cluster colleges shall deposit such funds against the maintenance of the campus, and facilities from time to time.

8. Location of the cluster colleges within the radius of 10 kms.
9. Library facilities.
10. Laboratories.
11. Classrooms.
12. Adequacy and sustainability for various purposes of the cluster colleges.
13. Auditorium.
14. Playground.
15. Hostel.
16. Health Centre.
17. Availability of physical facilities.
18. To increase and strengthen the Faculty Development Programmes (FDP) through collaborations and exchange of faculty.

The NEP–2020 envisages a common educational structure. It is based on national curricular framework which contains a common core along with other flexible components. The NEP–2020 on children emphasizes investment in the development of the young child. Early Childhood Care and Education (ECCE) is given high priority because it is child-oriented. A full integration of child care and pre-primary education known as the foundation stage will be a feeder and a strengthening factor for primary education. The National Education Policy–2020 and its Programme of Action in Maharashtra explicitly mentions that implementing the system of planning to promote a prescribed pattern so that it can serve as network of universities and colleges and to encourage professionalism among faculties, managements of the private education societies and to enable the sharing of facilities and experiences for nation's development. The utilization of the facilities of the Higher Education Institutes, services and support that could be made available for the cluster colleges. The NEP–2020 envisaged expansion of educational facilities to remove disparities in educational opportunities, making education relevant to the educational, social and economic needs. Therefore, NEP–2020 concentrates on the adoption of curriculum framework as:-

1. Flexibility to move from one discipline /course of study to another.
2. Multiple Entry Multiple Exit (MEME) option with Under Graduate Certificate/Diploma/ or Degree.
3. Flexibility for learners to move from one college to another to enable them to have interdisciplinary/ multidisciplinary learning.
4. Flexibility to switch to alternative modes of learning for e.g. Open and Online Learning; Offline; Online Learning and hybrid modes of learning.
5. Academic Bank of Credits (ABC).

Colleges under the affiliating system which do not have the freedom to prescribe the curriculum. The cluster colleges, if permitted offer wide range of courses through parallel arrangements. They can enrich inter-disciplinary/ multi-disciplinary courses which have greater potential for career development and value addition. It is true that in the context of democratization and expansion of education, it will help to increase the Gross Enrolment Ration (GER). Conventional universities have become more rigid to accommodate changes. Therefore, the concept of cluster colleges is most comprehensive to collaborate with other colleges for courses, programmes, research, co-curricular, extra-curricular activities which often enhance the quality education. For the promotion of excellence and enhancement of skills, there is a need of cluster colleges.

While managing the colleges, the concept of 'Cluster Colleges' has emerged as a result of overcoming the challenges faced by the higher education institutes, universities and government. The idea of 'Cluster Colleges', encourages neighbouring colleges to be linked with each other for major, minor, generic/ open electives, vocational and skill enhancement courses and ability enhancement courses. Indian knowledge systems, field projects, internships, apprenticeships, community engagement, co-curricular courses and research projects, and physical education can be shared along with the available facilities in which colleges reinforce each other by exchanging resources, teaching aids, playgrounds, gymnasium, laboratories, faculty exchange, and using them on sharing basis.

The Cluster Colleges may optimize of time as per their convenience. The Cluster Colleges campus can be used for day and evening shifts of the different courses and programmes. The regular faculty and visiting faculty can offer a considerable number of twinning programmes. Where a faculty is not available at one college to offer a course, a twinning arrangement shall be followed. Of course, it needs to be kept in view that the quality of education imparted in cluster colleges is directly linked with the quality of output of its graduates.

Of course, there is a need to select a 'Lead College' from the 'Cluster Colleges' in the area with a radius of 10 km, so that such a manageable and small group could function in a face-to-face relationship within an easily accessible distance. The concept of 'Cluster Colleges' and 'Lead College' will give a good deal of freedom to support the neighbouring colleges and the university to implement the policies framed and to complete the time-bound admissions and examination work. A 'Lead College' is normally an old multi-faculty college, accredited by NAAC / NBA which helps in evolving academic leadership along with sharing of experiments and innovations. The purpose of 'Cluster Colleges' is to overcome the present shortages of many colleges and share the available facilities with neighbouring colleges for better future for the learners. There is indeed a need to remove the apprehensions of private management, teaching and non-teaching staff. The 'synergic alliance' is possible if proper planning and educational management of 'Cluster Colleges' is implemented as per the guidelines provided by the university and government.

It is to be remembered in this context that the cohesiveness of the cluster colleges plays an important role in their cooperation and coordination to enhance the quality of education for national integrity and national development. It is also true that the cluster colleges share the available facilities for research, consultancy and extension activities. The teamwork of cluster colleges will motivate and inspire the faculty and learners too.

Maharashtra Public Universities Act, 2016, Section 77 (1) states that (d) in order to create synergy at the policy and operative level mechanism for co-existence and co-operation between different types of educational institutions in the domain of pure, technical and professional education at core and domain-specific skills level in the State (g) to create a policy and strategy for sharing of academic and knowledge resources infrastructure amongst various educational institutions and the State, Central and Industry research and development laboratories. (h) to establish and maintain educational information communication network in tandem with the national grid and also enhance the geographical reach so as to bring each and every educational institution into the educational information communication network and to keep track of technology changes and upgrade the network from time to time; (l) to explore the scope for sharing research journals, research and technology reviews and other such material that enhances scope and quality of research by use of information and communication technology through creation of network of various knowledge resource centres and educational and research and development institutions in the State and also at national level; (O) to advise on promoting co-operation and co-ordination of the various educational institutions among themselves and explore the scope for interaction between the universities on the one hand, and industry and other organizations on the other hand; (r) to advise on programmes for greater co-operation and interaction and exchange of university teachers, college teachers and the teachers of university departments.

In view of the above provisions made under the Act, 2016 the universities should be elevating, far-sighted and universal in their attitudes and activities. If they become short-sighted, narrow-minded and parochial, they cannot be recognized as universities. Unfortunately, sometimes, those who obtain degrees and come out of educational institutions, appear to be more and unduly proud of their religions, castes, communities, languages, provinces, and cultures, and look down upon those others. On the 18th of December, 1884, while conferring the Honorary Degree of LL.D. on Lord Ripon, the retiring Viceroy, Mr. Justice West, who was then Vice-chancellor of University of Mumbai (Bombay), made the following statement: "Here, I find a liberality and a single-minded pursuit of knowledge to which nearly all continental universities in Europe are strangers. On a board of examiners, one finds on his right hand a Jesuit and on his left a Presbyterian minister. Facing him are a Parsi and a Jew. Among them all a common spirit prevails, of disinterested zeal in diffusing the light of science. Men of every race and creed unite without chicane in the simple furtherance of learning." So, universities must be organized. And this organization must be international. Nowadays the State is too busy with laws. Let all the universities allot subjects and problems among themselves, and cooperate both in research and in publication.

Adequacy and sustainability for various purposes of universities and colleges are based on the principle of true education that promotes the spirit of problem-solving and creativity. The universities and colleges have an acculturating role. It refined sensitivities and perceptions that contribute to national cohesion, a scientific temper and independence of mind spirit - thus furthering the goals of human life. Therefore, world-famous physicist Albert Einstein in 1952, while addressing the teachers and students of New York University, remarked, “It is not enough to teach a man a speciality. Through it he may become a kind of useful machine, but a harmoniously developed personality. It is essential that a student acquires and understanding of and a lively feeling of values. He must acquire a vivid sense of the beautiful and of the morally good. Otherwise, he with his specialized knowledge more closely resembles a well-trained dog than a harmoniously developed personality”. This illustrates the limits of technical education and points out the need for humanistic education. Educated men must be more than merely trained job-seekers or skilled labourer. Therefore, delinking the degrees needs to be a primary focus of universities. Its implementation will lead to a re-shaping of job-specific programmes/ courses. On the basis of the tests on the suitability/ eligibility of candidates for specific jobs and to pave the way for the emergence of norms of comparable competence across the nation. The emphasis on vocational education and its expansion will help to meet the demand for students to be gainfully employed. An environment conducive to incubation, innovation and excellence is needed to promote in the higher education institutes. Of course, this can be managed only in an atmosphere of utmost intellectual rigour, seriousness of purpose, and at the same time, freedom essential for innovation, creativity and problem-solving.

Mahatma Gandhi rightly said, “By education, I mean all-round drawing out of the best in child, their mind-body, mind and spirit”. So, there is a need for teachers with greater accountability, better campus facilities, improved student services and discipline among the faculty and learners for improving the education system. The faculty is the key issue in the entire process of teaching and learning. The teachers say that the curriculum under NEP-2020 is heavily loaded and therefore, they are not in a position to complete the syllabus within a stipulated time. Hence, the way to come out from the crunch of faculty is to use modern technology to substitute the conventional methods of teaching.

Dr. Hari Gautam, in his convocation address, at the University of Mumbai on December 27, 1999, said, “The educational system in India is today in a critical state of being resistant to change. Though large, our educational system is neither relevant nor effective. India’s educational ethos needs major reforms in the context of changes that are sweeping our country. The transformation that society is going through warrants a rejuvenation in the way we teach and what we teach. Restructuring our educational institutions and the contents of the curricula is what is needed to produce the desired outcome. Unplanned institutional proliferation and unabated expansion of students’ enrollment should be resolutely and effectively curbed. It is, however, more important and pertinent as well to safeguard against mistakes than to unnecessarily expand. Since independence, though many commissions have submitted their reports and many eminent men have pronounced their plans for rejuvenating the system, alas, there has always been a wide gap between the plan and the action-leaving the system still stranded on the roads. Funds alone cannot help to improve the quality of our education. It urgently needs motivation of all including that of teachers, students, administrators and others.”

In order to keep pace with changing times universities and colleges need a revision. The existing system is inadequate to translate new ideas into reality. The universities could not keep effective check on affiliated colleges and research work in various research centres and departments. There is a need to stress the need for interdisciplinary studies, research and development and less official control. Closer cooperation is required between the various units of university administration and departments and the fair selection of the Principal, Teachers, Vice Chancellor, Pro Vice-Chancellor and other officers too. The promotion of quality education is possible if and only if there is government, community, faculty and alumni support. It is a common phenomenon that the government support is least to promote the cause of quality education therefore, it has affected very badly to maintain the standard of higher education. Therefore, it is expected that the introduction of NEP–2020 needed educational facilities and recruitment of the faculty to be increased for qualitative change in higher education. According to NEP–2020, assessment of performance is an integral part of any process of teaching and learning. The Continuous Internal Evaluation (CIE) ensures a method of assessment that is a valid and reliable measure of student development. The purpose of evaluation is to obtain systematic information to understand whether the intended learning has been achieved. Evaluating students’ behaviour, attitudes and interests and providing suitable opportunities for their academic development will help promote the career and personalities of the students.

"The concept of 'Cluster Colleges' and 'Cluster University' is students-centric development for social and national transformation. The thrust of NEP–2020 has been on comprehensive Indian knowledge systems, need-based education, educational empowerment through the provision of knowledge connectivity, physical connectivity and electronic connectivity. The NEP–2020 will promote interactive self-learning, with a focus on social, human and constitutional values.

The Education Commission, 1964-66 rightly stated: "The destiny of India is now being shaped in our classrooms. This, we believe, is no mere rhetoric. In a world based on science and technology, it is education that determines the level of prosperity, welfare and security of the people. On the quality and number of persons coming out of our success in the great enterprise of national reconstruction."

The National Education Policy–2020 recognizes that universities and colleges play an important role in promoting human values as well as societal well-being and in developing India as envisioned in its Constitution –a democratic, just, socially conscious, cultured, and humane nation upholding liberty, equality, fraternity, and justice for all. It notes that "given the 21st Century requirements, quality higher education must aim to develop good, thoughtful, well-rounded, and creative individuals."

The cardinal principle of the NEP–2020 is that holistic and multidisciplinary studies would help develop the capacity of the emotional, mental, educational, social, moral, aesthetic, intellectual and physical–in an integrated manner. The core objective of NEP–2020 is to build a strong knowledge society that can help develop and sustain a knowledge society. The undergraduate programme can enable learners to acquire competence in using modern technology, data science, data analytics, computational methods and other skills needed to enhance the knowledge economy. The Curriculum and Credit for Undergraduate Programme (CCUGP) with a student-centric approach and provides maximum flexibility in terms of choice of disciplines of study. The framework offers flexibility for learners to move from one institution to another as per their choice. It also offers flexibility to switch to alternate modes of learning (online, offline, hybrid, distance learning). Under NEP–2020 the following educational structure has been accepted in the State of Maharashtra:

1. The curriculum and credit framework reflects the restructured programmes.
2. Integration of the humanities and social sciences with science, technology, engineering and mathematics (STEM).
3. Emphasis on critical thinking, creativity, decision-making, innovation, skill education, ethics, cultural roots of India and Indian knowledge systems.
4. Flexibility to move from one department of study to another.
5. Regulations for Academic Bank of Credits (ABC).
6. Multiple Entry and Multiple Exit (MEME).
7. Value Education.
8. The curriculum courses-major, minor, multidisciplinary, ability enhancement, skill enhancement, value-added, summer internship, research project, dissertation, job training, co-curricular, health, wellness, sports, yoga and digital and technological solutions provide the opportunity for a student to pursue in-depth study of a subject.
9. The Learning Outcomes-Based Curriculum (LOBC) enable learners to attain defined goal as the result of learning outcomes.
10. Use of learner-centric pedagogies.

Today, it is true that complaints against higher education institutes are growing. Universities and colleges are finding it more difficult to sustain the quality of education. There is much interference of the politicians in the day-to-day administrative and academic functioning of the universities. Dr Matthai, then Vice-chancellor, University of Mumbai, wrote a letter to Pandit Jawaharlal Nehru on 2nd June 1956: "Since writing my second letter to you regarding your acceptance the Honorary Fellowship conferred by the College of Physicians and Surgeons, I have gathered a considerable amount of information regarding this college. The undue relaxation of the standards of medical education required for qualifying titles which this institution has consistently pursued since its inception is already hampering the efforts made by the universities like ours to maintain reasonable standards. You and Morarji, by accepting Honorary Fellowships without so much as the courtesy of a previous consultation with the university (nor if my information is correct, with the Ministry of Health) have in my judgment weakened the hands of those who are striving against heavy odds to maintain academic standards. I regret to say that in doing so you have done a disservice to the cause of university education." It is a fact that the growing concern over the erosion of quality education and human values has brought to focus the need for revamping of higher education with appropriate readjustment in the curriculum in order to make higher education a forceful tool for the cultivation of scientific, social and moral values. The environment in Indian universities and colleges is not up to the standard. The universities of India are facing declining standards today. Dr. Sarup Singh, in his convocation address, the University of Mumbai on March 4, 1992, said: "After all this is not one of the several questions that we are facing but the one and the central question for the future of our education. It is, of course, not any easy question to answer. The whole thing is linked with several other factors including what happens in the social, economic and political sphere. But as an old university teacher, I find it difficult to accept the position that our universities cannot do better. Surely they can. My experience is that our capacity for achievement is tremendous. Only that we fail to exploit it."

Universities are facing many handicaps. There is an all-embracing control of the government. There is no 'substantial progress' in the universities. The government dictates the universities and does not revise and check the acts of the universities. The Vice-Chancellors do not point out the nature of the obstacles to be faced in the practical application of the principle. The method of overcoming obstacles is that control should be exercised from outside rather than from within.

1. The administration in universities is mechanical, lifeless, and soul-less. It has crushed the self-reliance of the students and staff.
2. Undue advantage has been taken by the administrative staff in their time-bound promotions.
3. University administration is not progressive.
4. There is a tendency on the part of the heads of the departments and sections to appoint persons temporarily without following the prescribed norms and then to claim preference for them.
5. There is a lack of training among the employees of the university. To make the administrative staff efficient, there is no provision for pre-entry and post-entry training.
6. There is favoritism and arbitrariness in the system of promotions.
7. There is too much corruption in the examinations and other departments.
8. There has been too much of interference by the ministers or big guns belonging to various political parties.
9. University authorities do not go to their offices to serve the student community.
10. Treatment towards the students is most unfortunate.
11. The administration of the universities has deteriorated.
12. There are some instances in which the higher authority of the university overruled the unanimous decisions of the Senate, Management Council, Academic Councils etc.
13. The actual relationship between the Chancellor, Ministers and Vice Chancellor is a matter of personal equation.

Listing the flaws of the system is not empty criticism. Learning from the mistakes of the past, or the drawbacks of the present, is the only way towards improving the future. We must never be afraid of speaking truth to power, just as Dr Mathai did not hesitate to voice his objections to even Prime Minister Nehru. He did so not because of any political agenda, but because of his genuine concern for the state of university education then. It is also important to note that there is no failsafe solution unless it is put into practice and is backed throughout by the genuine desire of all the stakeholders to change for the better. It is not probable that we shall stop making mistakes, what we need to do is to keep critiquing and evaluating every part of the process and keep learning at every step. The system of cluster colleges is intended to provide a viable solution to many of the problems in today's higher education system, but it cannot work unless we collaborate equally and are equally invested in the result to provide the best possible education to our learners.

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Apprenticeship for Credits: Need for a Paradigm Shift

B L Gupta* and Pratibha Bundela Gupta**

The National Education Policy 2020 envisioned providing relevant education to the world of work, multidisciplinary education, and education to improve people's quality of life. Higher education develops the theoretical abilities of the graduates in the changing contexts of the world of work. The apprenticeship develops the competencies and proficiency to perform professionally in work situations as stated in Figure 1.

An eco-system for apprenticeship is developed by the Government of India, State Governments, industries and organisations to support apprenticeships for graduates. The government of India launched the national apprenticeship training portal (NATs–2.0) in July 2024 to ease the apprenticeship process through digitisation and online access to all stakeholders. Establishments and apprentices require a one-time registration on this portal to receive and impart on-the-job training.

Gayithri et al. (2019) critically evaluated the apprenticeship in India and stated that there is a mismatch between the demand and supply of skilled labour force, parallel schemes and lack of coordination, lack of synergy between monitoring and implementing authorities, incentives and penalties, awareness about apprenticeship policy, the ailment of incentives, government machinery, and involvement of key actors and industry-specific concerns. International Labour Organisation (ILO) has stated that apprenticeship increases employability and reduces the risk of unemployment while at the same time reducing the potential social costs. A cost-benefit analysis for enterprises, apprentices, and the government is detailed during and after the apprenticeship.

Ravichandran (2023) stated that industry participation should be incentivised, awareness about apprenticeship should be created, quality of apprenticeship should be improved, apprenticeship in new sectors should be introduced, and collaboration with other countries should be encouraged to increase the outreach and enhance the quality of apprenticeship.

Benefits of Apprenticeship to Stakeholders

The scientifically designed, implemented, monitored, and evaluated apprenticeship brings various benefits to all the stakeholders. Some of the significant benefits mentioned in NATs process manual version 2.0 (MHRD, 2017) and other documents are adopted. The benefits for each stakeholder are presented here.

Benefits to Graduates

The graduates enjoy a variety of benefits related to learning and development, career options, placement and undertaking innovations. The apprentices get acquainted with the developments taking place in the world of work. They develop capabilities as stated in Figure 1 to perform in work-life situations. They appreciate the work environment, work culture, and professional ethics in which the industry operates. The apprentices are permanently absorbed by the establishments as training costs to prepare the person for the job are saved. The successful completion of the apprenticeship is duly assessed and credited for horizontal and vertical redemption of credits for further learning and certification.

Benefits to Establishments

Selection of the right person for the right job. The establishments have one year to assess the performance of the apprentices and select them as regular employees of the establishment.

It is also cost-saving. The cost of recruitment and selection, induction and orientation, training and development is saved. The employee turnover is lower, which indirectly saves costs and improves production. During the apprenticeship, the Government of India pays a stipend of Rs 4000 to 4500 per month, and an equal or more amount is paid by establishments, so for one year, apprentices are available at a meagre amount.

It provides a substitute for regular employee. Apprentices develop competencies and proficiencies during the initial period of apprenticeship, so in a

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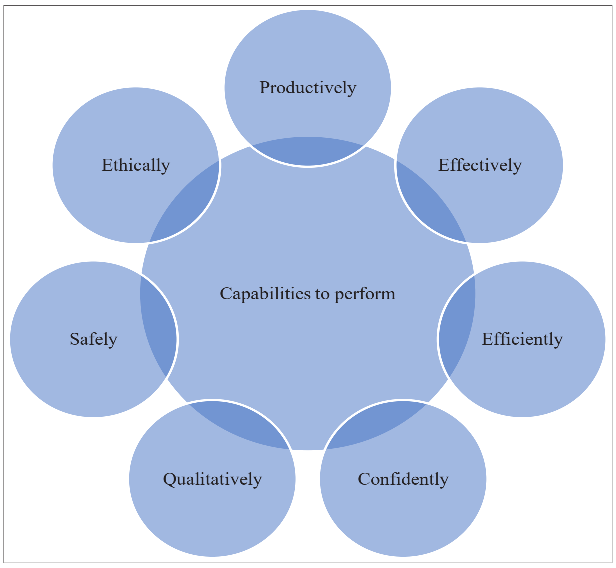
Figure 1: Capabilities Developed by Apprenticeship



later period of apprenticeship, they may temporarily substitute and relieve the regular employees for leave, a higher level of training and development and relaxation.

It meets peak demand. Apprentices are used to meet the requirements of peak demand for products and services.

Continuous availability of people for work. Apprentices are selected every year by the establishments, so trainees are continuously available to meet current and future requirements.

Benefits to Society

The society gets quality products produced by trained human resources. The society gets quality, safe, and quick services. The problem of unemployed youth is solved through an appropriate match between the establishment requirements and apprentices' needs. The public money utilised for apprenticeships gives positive returns.

Qualification Levels

The qualification levels are adapted from the NCrF and NHEQF to articulate the learning outcomes for the apprentices. The apprenticeship is provided in on-the-job situations; therefore, no theoretical learning outcome is framed. In other words, all the learning outcomes are expressed in competency statements, which are developed and practised in the world of work. The levels of award of apprenticeship credits are indicated in Table 1.

Table 1. Apprenticeship after Educational Qualification, Level in NCrF and Credit Awarded in NCrF level

Apprenticeship after Education qualification	NCrF level achieved	Apprenticeship credit levels
10th plus three years diploma	4.5	5
12th plus two years diploma	5	5.5
Undergraduate general stream three-year programme	5.5	6
Undergraduate honours and B. Tech – 4 years programme	6	6.5

A generic framework of learning outcomes for undergraduate honours and B. Tech /B.E. is presented in Table-2 and Table-3. Similar frameworks are developed for 10th plus three years diploma pass-outs, 12th plus two years diploma pass-outs, and undergraduate three-year Bachelor degree pass-outs. This digital curriculum further evolves through discussions with establishments in different sectors.

Management of Apprenticeship for Giving Credits

The learning outcome-based apprentices model developed for learning, assessment and creditization

Figure 2: Characteristics of Learning Outcome-Based Apprenticeship

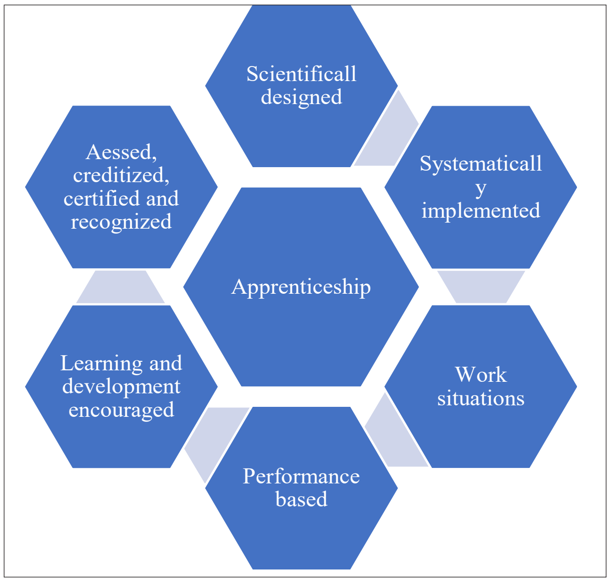


Table-2: Framework of Learning Outcomes after Completing the four-year Degree Programme

Sl. No.	Learning Outcomes
Module 1	**Orientation of the Organisation**
1.	Describe the vision and mission of the organisation
2.	Describe the organisational structure
3.	Describe the major clients of the organisation
4.	Describe the main products/services of the organisation
5.	Describe the main production/service processes of the organisation
6.	Describe the raw materials used in the organisation
7.	Describe the quality assurance mechanism of the organisation
8.	Describe the major issues/challenges of the organisation
9.	Describe the turnover of the organisation
10.	Describe the main suppliers of the organisation
Module 2	**Practice on Systems and Processes of the Organisation**
1.	Describe the main production and service processes of the organisation
2.	Describe the type and properties of raw material
3.	Describe the quality assurance mechanism
4.	Use of professional skills
5.	Perform the technical task/service
6.	Use of soft skills
7.	Maintain the machine
8.	Operate machine
9.	Demonstration of core technical skills
10.	Adhere to safety measures
11.	Use of standards during performance
12.	Prepare record
13.	Report progress
14.	Observe professional ethics
15.	Lead a team
16.	Work in a team
17.	Interact with different stakeholders
Module 3	**Practice on Systems and Processes**
1.	Read the drawing of the product
2.	Use the drawing of the product
3.	Take measurements with accuracy
4.	Follow the standard process
5.	Select appropriate tools and techniques
6.	Observe safety norms
7.	Maintain the machine
8.	Perform various tasks
9.	Diagnose problems
10.	Solve routine problems
11.	Make decisions
12.	Prepare record
13.	Report progress
14.	Receive feedback on the progress of the work
15.	Observe professional ethics
16.	Lead a team
17.	Work in a team
18.	Interact with different stakeholders
Module 4	**Initiatives Towards Innovations/creativity/project Work**
1.	Generate innovative ideas

2.	Level of innovation
3.	Use of technical and soft skills for carrying out innovations
4.	Organise resources to carry out innovations
5.	Use of advanced tools and techniques
6.	Use of recent technology such as automated manufacturing, internet of things, machine learning, augmented reality, virtual reality, drone technology, software and ICT in innovations
7.	Impact of innovation
8.	Manage innovative projects
9.	Prepare project proposal and project completion report
10.	Document significant events of the project
11.	Demonstrate interpersonal relationship
12.	Demonstrate multidisciplinary and cross-disciplinary competence
13.	Quality of publication (internal reports
Module 5	**Generic Learning Outcomes**
1.	Prepare technical proposals, reports, documents, drawings, case studies etc
2.	Document significant events of the project
3.	Present technical documents with the purpose
4.	Conduct interactions and meetings to seek and communicate information
5.	Use interpersonal relations for professional communication
6.	Lead a team for achieving challenging goals
7.	Use entrepreneurship skills
8.	Use incubation skills
9.	Use ICT skills for discharging roles
10.	Use software
11.	Manage time effectively

Table-3: Learning Portfolio Maintained by Apprentices for each Module

Module 1 Orientation of the Organisation 1. Describe the vision and mission of the organisation where you are apprentice 2. Describe the organisational structure 3. Describe the major clients of the organisation 4. Describe the main products/services of the organisation 5. Describe the main production/service processes of the organisation 6. Describe the raw materials used in the organisation 7. Describe the quality assurance mechanism of the organisation 8. Describe the major issues/challenges of the organisation 9. Describe the turnover of the organisation 10. Describe the main suppliers of the organisation 11. Describe the significant learning that took place from week 1 to week 4 of the apprenticeship
Module 2 Practice on Systems and Processes of the Organisation 1. Describe the main production/service processes of the organisation 2. Describe the properties of raw materials used in the organisation 3. Describe the quality assurance mechanism of the organisation 4. State the professional skills developed during the performance of processes 5. State the soft skills developed during the apprentice 6. Describe the task performed by you during your apprenticeship 7. Describe the type of machines on which you have performed the task 8. State the core technical skills you have developed while performing the task 9. State the safety measure you have followed while performing the task 10. State the standards/ parameters you have followed during the performance of the task 11. Describe the details of mentoring and feedback you have received from the supervisor and other stakeholders during the performance of the task 12. Describe the significant learning that took place from week 5 to week 12 of the apprenticeship

Module 3 Practice on Systems and Processes 1. State the theory or practical which was useful for performing the task 2. Describe the technical problems you have faced while performing the task 3. Describe the mechanism of solving the production/service-related problems 4. State the innovations implemented in production/ service processes 5. State tools and techniques used in the production process 6. Describe the quality assurance mechanism of the organisation in the production or service organisation 7. State the professional skills developed during the performance of processes 8. State the soft skills developed during the apprentice 9. Describe the task performed by you during your apprenticeship 10. Describe the type of machines on which you have performed the task 11. State the core technical skills you have developed while performing the task 12. State the safety measure you have followed while performing the task 13. State the standards/ parameters you have followed during the performance of the task 14. Describe the details of mentoring and feedback you have received from the supervisor and other stakeholders during the performance of the task 15. Describe the significant learning that took place from week 13 to week 24 of the apprenticeship
Module 4 Initiatives Towards Innovations/creativity/project Work 1. State the initiatives taken towards bringing innovations/ creative ideas/ project work during the apprenticeship 2. Describe the innovations undertaken to bring improvement in process/product/ material/tools/ techniques/ inputs/methods 3. Describe the impact of the innovations in technical/ economic/time/environment/ social connect 4. Describe the tools and techniques used for bringing innovations 5. Provide details of publications, presentations, patent filing, and case preparation on innovations made.
Module 5 Generic Learning Outcomes 1. Describe the documents you have prepared during your apprenticeship 2. Describe the presentations you have made during your apprenticeship 3. Describe the innovations you have made during your apprenticeship 4. Describe the interviews you have conducted during your apprenticeship 5. Describe the events in which you have used leadership skills

of achievement of learning outcomes has a direct impact on the performance of the apprentices and establishments. The characteristics of learning outcome-based apprenticeship are stated in Figure 2

The NEP–2020 and NCrF recommend giving credits to the learning of the students through assessment of learning outcomes at the appropriate level of credits. The apprenticeship is managed using the six-step process, as indicated in Figure 3.

Digital Curriculum for Apprenticeship

Process of Designing Outcome-Based Curriculum

The digital curriculum of apprenticeship is scientifically designed by the National Institute of Technical Teachers' Training and Research, Bhopal (NITTTR, Bhopal) (deemed to be a university under a distinct category), Board of Apprenticeship Training, (BoAT) Western Region, Mumbai, and establishments under the guidance of the Ministry of Education Government of India. The digital curriculum is aligned with provisions of the National Education Policy (NEP) 2020, National Credit Framework (NCrF), National Higher Education Qualification Framework (NHEQF) and National Vocational Education Qualification Framework (NVEQF).

The NCrF is a one meta framework based on the basic principles of credits and credit transfer,

Figure 3. Management of Apprenticeship for offering Credits

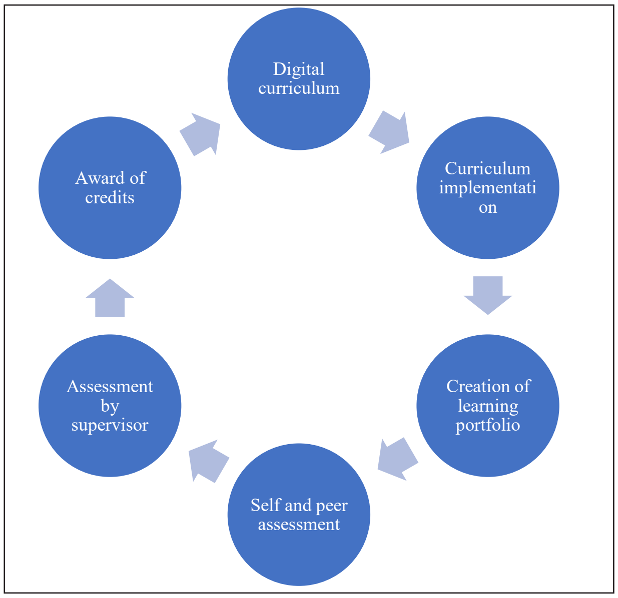
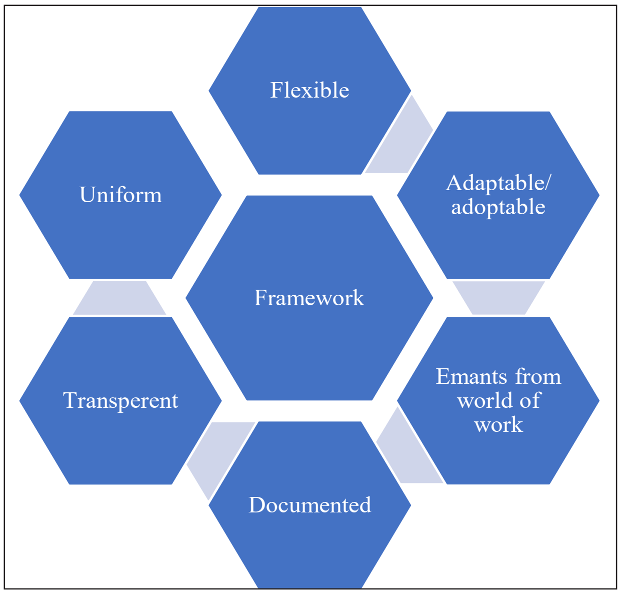


Figure 4. Characteristics of Learning Outcomes Framework



notional learning hours in a year for assessment and transfer of credits, components of learning NCrF credit levels, notional hours and credit assignments and assessment bands (UGC, 2013).

The National Higher Education Qualification Framework (NHEQF) prescribed the expected graduate attributes at different levels of NHEQF, as well as learning outcomes descriptors for different levels. The graduate attributes and learning outcomes descriptors guided the process of articulation of apprenticeship framework modules and learning outcomes.

A logical framework recommended in NATS process manual version 2.0 is adapted for developing the digital curriculum stating the learning outcomes. The recommended framework is input, process, and outputs, which is used for monitoring the quality of the training and outcomes and impact is the scope of the evaluation. On the same lines, the digital curriculum is developed to align with NCrF, NHEQF, NVEQF, and NATs 2.0. This framework is developed following the principles of outcome-based education philosophy and competency-based learning. The principles are stated in Figure 4.

The establishments offering apprenticeship have the autonomy to add value to it, remove some of the learning outcomes which are not developed, and modify some of the learning outcomes to make the framework of learning outcomes relevant to actual training provided by them, maintaining the spirit and intent of the framework. The framework of learning outcomes satisfies the current and future needs of apprentices in learning. The module-wise learning outcomes are articulated and documented, which ensures transparency in imparting training and uniformity across the establishments.

The learning outcomes are articulated at different levels of NCrF following the provisions of the NHEQF, occupation standards, and qualifications packs (QPs) for different job roles in different sectors. The NHEQF intends to ensure quality at predefined levels of learning outcomes. It guides the process of design of the curriculum, teaching-learning process, assessment of students learning levels, periodic review of the programme, assessment and credit (UGC, 2023c)

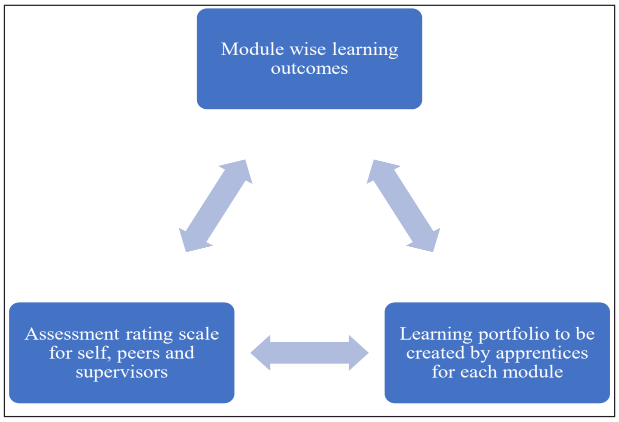
MoE (2022) declared guidelines for apprenticeship-embedded degree programmes for technical institutions. These programmes will be offered by technical institutes in collaboration with industry under the guidance of BoAT. The vision of apprenticeship training is to create skilled technical manpower for the nation by utilising the training facilities available in industries and imparting quality training to apprentices. Apprenticeship training is provided under the Apprentices Act 1961 to enhance manpower competency. This act was amended in 1973, 1086 and 2014 to enlarge the scope of apprenticeship training to general stream programmes (MHRD, 2017).

Ryan et al (2023) described the pedagogy of modern apprenticeship comprising five key features viz in context, among the community, through development, with agency and towards flexibility.

Elements of Digital Curriculum

The digital curriculum curriculum is developed following the outcome-based education philosophy. It comprises three elements, as stated in Figure 5.

Figure 5: Elements of Digital Curriculum



Module-wise Learning Outcomes

The learning outcomes mentioned in the digital curriculum are the source of motivation for learning in the establishment as they communicate the terminal learning outcomes in each module. These are used for self-learning, peer learning by the apprentices, and guided learning from supervisors. These are used to diagnose the learning gaps and learning problems of the apprentices and take corrective and preventive actions by apprentices and supervisors.

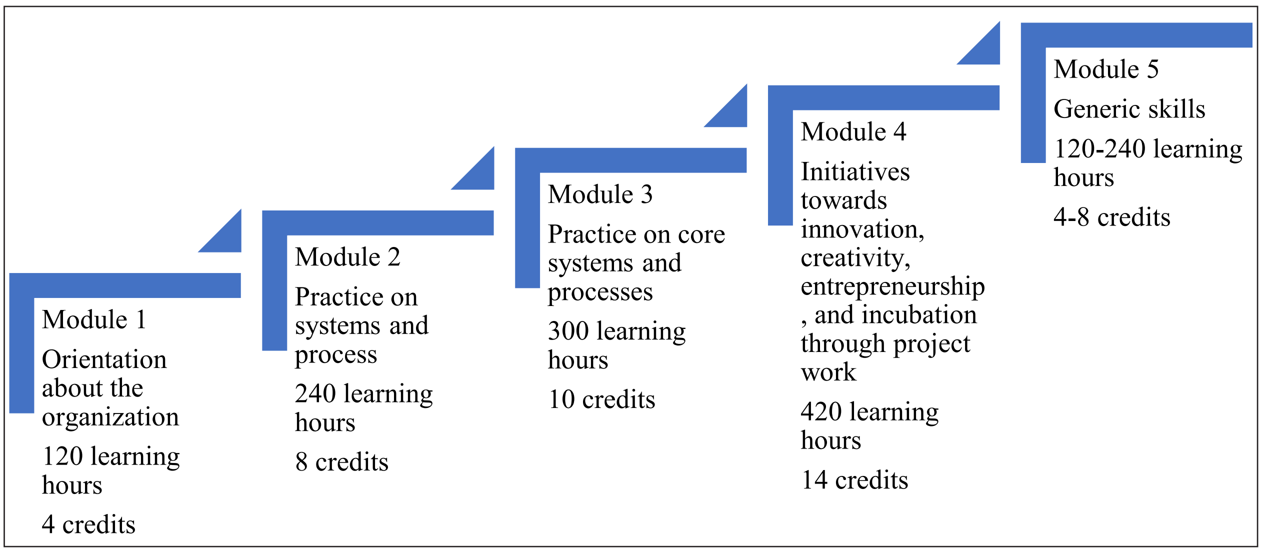
The digital curriculum comprises a framework of five performance-based modules in a hierarchy. Each module is allocated notional learning hours and credits. The complete framework comprises 40-44 credits, which are awarded based on the intended level of performance in each module. The terminal learning outcomes are stated for each module following the principles of outcome-based education. The digital curriculum is uploaded to e-prashikshan of NITTTR, Bhopal, and is available to the supervisor, apprentices, and authorities right from the first day of the apprenticeship. The digital curriculum is developed in five hierarchical modules, as stated in Figure 6, .

Module 1 Orientation about the Industry/ Organisation

Module one comprises learning outcomes related to the industrial/organisational environment.

The apprentices are oriented, inducted, and socialise in the industrial environment, which is altogether different from the academic environment. The overview of the industry, way of functioning, industrial culture, professional ethics, use of tools and technology in production, raw material and finished products, safety, hygiene, housekeeping,

Figure 6: Hierarchy of Five Modules for Apprenticeship



working in teams and similar appreciation is provided to apprentices. The apprentices learn more and more about the industry/organisation holistically and induct themselves into performing tasks and activities under the mentorship of the supervisor. At the end of 4 weeks of training, apprentices submit a learning portfolio on ***e-preshikshan***, which is assessed by their supervisor.

Module 2 Practice on Systems and Processes

Module two comprises terminal learning outcomes related to the performance of industrial/organisational systems and processes. The apprentices develop technical, professional, generic, soft skills, ethical, social, managerial, quality assurance, safety, housekeeping, information communication technology, and similar skills performing under the mentorship of a supervisor. At this stage, apprentices develop the skills to confidently and professionally perform routine tasks, activities, and events in the work environment. At the end of 12 weeks of training, the apprentices submit the learning portfolio on *e-prashikshan*, which their supervisor assesses.

Module 3 Practice on Core Systems and Processes

Module three comprises terminal learning outcomes related to performing routine tasks such as planning, problem-solving, use of tools and techniques, use of innovative approaches, use of quality assurance mechanisms, technical and professional skills, safety measures, adherence to benchmarks and quality standards, monitoring and review of the progress and the like. At the end of 24 weeks of training, the apprentices submit the learning portfolio on e-prashikshan, which their supervisor assesses.

Module 4 Practice on Core Systems and Processes

Module four comprises terminal learning outcomes related to creativity, innovation, critical thinking, investigation, complex problem solving, value addition, quality improvement, effective resources utilisation, use of advanced tools and techniques, use of information communication technology, digital technology and software, project management, leadership, documentation, conflict management, crisis management, risk-taking, cost economics, collaborative, proposal and report preparation and interpretation, cross-disciplinary and multidisciplinary perspective of the situations and the like. After completing module 4 training, the apprentices demonstrate higher learning outcomes. At the end of 40 weeks of training, the apprentices submit the learning portfolio on *e-prashikshan*, which their supervisor assesses.

Module 5 Development of Generic Learning Outcomes

Module five comprises terminal learning outcomes related to preparing proposals and reports, documentation of significant events, presentation skills, interpersonal skills, managerial skills, entrepreneurship and incubation skills, information communication skills, collaboration skills, and other high-tech skills related to discipline. These learning outcomes are developed from day one of the apprenticeship but assessed at the end of the apprenticeship. The apprentices can develop some of the notified skills through the SWAYAM course. At the end of 40-44 weeks of training, the apprentices submit the learning portfolio on e-prashikshan, which their supervisor assesses.

Learning Portfolio to be Created by Apprentices for Each Module

The learning portfolio emanates from the terminal learning outcomes stated in each module. 100 points for each credit are allocated and awarded module-wise and not credit-wise. The points for creating a learning portfolio are stated in the module and uploaded on *e-prashikshan.* The apprentices download the world file of the learning portfolio from *e-prashikshan* and record what they have learned at each point of the learning portfolio. If they learn additional abilities that are not mentioned in the learning portfolio, they have the freedom to record them.

Learning Portfolio-Based Assessment

The assessment is used as a tool for learning. The assessment of learning outcomes should be stress-free for the apprentices. The assessment should be valid and reliable concerning learning outcomes. The assessment should be transparent and documented for further reference. In outcome-based assessment, the focus is on the demonstration of ability or actual performance in real-life situations. The learning portfolio created by apprentices is strong and direct evidence of achievement of learning outcomes.

The assessment rating scale provided in the digital curriculum for each module encourages self-assessment and peer assessment for self and mutual learning. Many of the learning gaps are fulfilled using assessment ratings by self and peers. Four levels of assessment are used in the rating scale for assessing the terminal learning outcomes. These levels are emerging, developing, proficient, and advanced. The minimum acceptable level of performance in the assessment of terminal learning outcomes in each module is proficient. The self and peer assessment is used for self and mutual learning, and the assessment made by the supervisor is used to award grades and credits.

Implementation of Digital Curriculum

The establishments organise the apprenticeship in line with the learning outcomes, and apprentices create learning portfolios based on the points mentioned in the learning portfolios. The establishments create assignments, tasks, activities, events, and projects for the apprentices to develop the intended learning outcomes. The supervisors create opportunities for guided practice and feedback, as well as independent practice and feedback, to develop the intended learning outcomes. The apprentices are encouraged to observe the performance of specific tasks, processes, and systems. Then, apprentices are encouraged to perform on the production line under close supervision. The apprentices are asked to record the learning that took place concerning points mentioned in the learning portfolio.

Creation of Learning Portfolio by Apprentices

The learning portfolio may be created in the form of anecdotes, incidents, case studies, reports, observations, artefacts, reflections, and the like. In some critical situations, learning may be video recorded. The process of creating a learning portfolio with reference to terminal learning outcomes and learning points scaffolds learning, becomes the basis of reflection on the progress of learning, and guides future learning. The learning portfolio speaks on its own about attaining the learning outcomes. It is a strong predictor of the capacity and capability of apprentices.

Self and Peer Assessment

The self and peer assessment of the learning portfolio is carried out to identify the learning gaps with respect to terminal learning outcomes. These gaps are removed in consultation with peers and supervisors. Then, the learning portfolio is uploaded on *e-prashikshan* of NITTTR, Bhopal.

Assessment of Learning Outcomes by Supervisor

Supervisors plan and implement the digital curriculum in their establishment. They know the terminal learning outcomes, points of learning portfolio, and assessment rating scale. The apprentices learn and develop learning outcomes under the mentorship of the supervisor. The supervisors know the performance level of each apprentice with respect to terminal learning outcomes. The apprentices upload the learning portfolio, self-assessment, and peer assessment after being validated by supervisors. Therefore, supervisors only require a little time to assess the performance of the apprentices.

Award of Credits

The learning portfolio, self and peer assessment, and assessment carried out by the supervisor are validated by NITTTR, Bhopal and BoAT, Mumbai for awarding credits to the apprentices. The credits are awarded module-wise at the appropriate level of NCrF. Each credit carries 100 marks, out of which apprentices have to obtain 75 marks for a credit award. The credits of the apprentices are accumulated on the academic bank of credits (ABC), which may be redeemed by apprentices for obtaining higher education.

The digital curriculum, learning portfolio, and assessment rating scales are created on *e-prashikshan* of NITTTR, Bhopal, which ensures data security and enables the process of e-documentation, assessment, marking, and credits. NITTTR, Bhopal and BoAT, Mumbai manage all types of apprenticeships for all types of establishments through *e-prashikshan.* The complete process of registration to creditization of apprenticeship is paperless.

Role of Establishments in Implementing Apprenticeship

The new apprenticeship system is guided by the digital curriculum, learning portfolio, and assessment rating scale to satisfy the credit requirements at a particular level of credit in NCrF. Therefore, the establishments are expected to perform the following roles: proactively, effectively, efficiently, and productively implement the apprenticeship in their establishments.

1. Appreciate the provisions of the digital curriculum, learning portfolio, and assessment rating scale.
2. Allocate the supervisor/mentor to each apprentice. It is expected that 10-20 apprentices will be allocated to one supervisor. The same supervisor is authorised to assess e-prashikshan.
3. Ensure registration of supervisors and apprentices on appropriate courses created on e-prashikshan of NITTTR, Bhopal.
4. Ensure supervisors' training to manage outcome-based apprenticeship aligned with digital curriculum, learning portfolio, and assessment of outcomes.
5. Create necessary and sufficient tasks, activities, assignments, events, and projects for the apprentices to develop the expected level of learning outcomes.
6. Contribute to the development of industry-oriented courses for apprentices to be offered on SWAYAM.
7. Create learning challenges for the apprentices in day-to-day performance to develop a higher level of learning.
8. Encourage apprentices to adhere to industrial practices and standards.
9. Mentor the apprentices to accept innovative and challenging project work to develop cross-disciplinary and multidisciplinary competencies.
10. Share the plans, documents, workbooks, manuals, reports, and drawings with the apprentices to develop technical and organisational communication abilities.
11. Encourage apprentices to accept complex problem-solving through experimentation, investigation, inquiry, and project work.

Recommendations

Related to Enhancing the Outreach

1. To enhance the outreach of apprenticeship, establishments need to be prioritised to accommodate hundreds of apprentices every year. The Board of Apprenticeship needs to approach these establishments to enrol apprentices for on-the-job training. These establishments need to be permitted to host short-duration videos about the establishments on NATS 2.0 or other appropriate online platforms to attract the right candidates.
2. Success stories of establishments and apprentices need to be documented and shared with potential apprentices through NATS 2.0 and education institutions' websites.
3. The brief information about apprenticeships must be circulated to final-year students of undergraduate and diploma programmes through their registered mail.
4. A quiz competition needs to be organised at the national level to make students aware of apprenticeship.
5. Higher education institutions need to be encouraged to organise introductory programmes on apprenticeship for graduating students. The introduction to apprenticeship needs to be an integral element of career guidance and student placement.
6. Graduating students need to get sms and e-mails encompassing links to register for apprenticeship.
7. The establishments need to inform the students who visit the establishment about apprentice facilities.
8. The NATs 2.0 process manual needs to be displayed on UGC, AICTE, NBA and NAAC websites. It should be displayed on higher education institutions' websites.

Registration of Apprentices

1. Higher education institutions need to facilitate the registration process on NATS 2.0 for graduating students interested in apprenticeships.
2. One-day centralised introductory and registration camps need to be organised in cities with a high density of higher education institutions.
3. The student clubs in higher education institutions need to assign the task of encouraging the graduating students to register on NATs 2.0 for the apprenticeship.

Quality of Apprenticeship

1. The provisions of NEP 2020, NCrF, and NHEQF have created challenges for enhancing the quality of apprenticeship. The selection of the right apprentice for right establishment is important for ensuring the quality of the apprenticeship.

2. The establishment needs to declare about the type of apprentices they will select. In other words what type of professional and career vision of the candidates does the establishment facilitate to satisfy through apprenticeship?
3. The establishments need to declare the process and criteria of the selection of apprentices, including the type of selection test viz personal interview, discussion, aptitude test, theory test, role play and the like (Aggarwal, 2021).
4. The establishments need to declare the complete apprenticeship schedule and expectations from the apprentices regarding the apprenticeship schedule, timing, learning portfolio, and participation in the assessment process.
5. The establishments must design tasks, activities, assignments, events, projects, visits, interactions, meetings, and creativity sessions to match the terminal learning outcomes. These assignments will encourage apprentices to create learning portfolios.
6. The establishments need to encourage using various learning methods, viz. imitation, practice followed by feedback, simulated practice, role-play, observation, interactions, projects, creativity sessions, investigation, enquiry, interview, problem-solving, case analysis, research, and the like. The scope needs to be created in apprenticeship for learning through struggle, mistake, observation, reflection, introspection, listening, experimenting, investigating, critical thinking, decision making, and resolving needs to be created for developing higher levels of terminal outcomes.
7. The establishments need to declare additional incentives to attract good candidates to opt for a specific establishment. At the same time, the candidates need to know why they are selecting a particular establishment for apprenticeship.
8. The establishment needs to mentor apprentices at an appropriate level in NCrF to enable them to develop and demonstrate terminal learning outcomes and earn credits.
9. The establishments need to adhere to the digital curriculum developed by NITTTR, Bhopal, and BoAT Mumbai to ensure the quality of learning and the development of terminal learning outcomes for apprentices.
10. The establishments need to adapt/adopt the framework of learning outcomes stated in the digital curriculum, maintaining the spirit of the framework.
11. The establishments need to recommend a course to supplement and complement the development of terminal learning outcomes in each module of the framework. The course may be online, distance, or regular at a university. The supervisor apprentices ratio should be at most 1:20.
12. The establishments and supervisors need to practice e-prashikshan to assess the achievement of terminal learning outcomes based on the learning portfolio on a scheduled timeline.
13. The supervisors need to develop a formative assessment mechanism to diagnose the apprentices' learning gaps and problems and provide appropriate guidance to fill the learning gaps. The supervisors may develop formative assessment tools such as check sheets, rating scales, observation schedules, rubrics, and bipolar scales. The formative assessment is used to mentor, guide, coach, and counsel apprentices to harness their strengths and remove learning gaps.
14. NITTTR and BoAT need to develop videos and e-contents for supervisors on organising effective training, mentoring, guidance, coaching, providing feedback, formative and summative assessment, designing various types of assignments for the apprentices matching with the terminal learning outcomes, formative and summative assessment tools and techniques and the like. The NITTTR and BoAT need to develop videos and e-content on principles of training and learning applicable to on-the-job training and learning. These videos need to be hosted on e-prashikshan or SWAYAM in the form of a course for supervisors.
15. NITTTR and BoAT need to develop videos and e-content for apprentices on methods of learning and developing terminal learning outcomes in establishments, as well as receiving mentoring, coaching, guidance, and feedback from supervisors and other resource persons.
16. NITTTR and BoAT need to develop videos and e-content for apprentices on methods of collecting

information through interviews, interactions, inquiries, investigations, discussions, meetings and the like. They need to develop videos and e-content on maintaining a diary on significant learning, creating a learning portfolio with respect to learning outcomes, preparing different types of reports on systems and processes, developing a case study, recording anecdotes and incidents, preparing a journal, and the like.

17. NITTTR and BoAT need to prepare a detailed guideline document to ensure the effective implementation of apprenticeship across the establishments.

18. NITTTR and BoAT need to prepare credit courses on generic skills, soft skills, life skills, managerial skills, power skills, information communication technology skills, entrepreneurship skills, incubation skills, research skills, high tech skills and host these courses on SWAYAM.

Evaluation of Effectiveness and Impact of Apprenticeship

NITTTR and BoAT need to conduct various types of research studies to evaluate the impact of apprenticeship and bring continuous systemic improvement in the apprenticeship. The research studies could be evaluation studies, impact studies, tracer studies, case studies and Snap studies.

Conclusion

Quality apprenticeship of diploma holders and graduates will contribute to achieving the vision of quality education stated in NEP 2020. It will not only fill up the skills gap but also develop cross-disciplinary and multidisciplinary competencies in the apprentices to make them work-ready and face the challenges of the world of work. The quality apprenticeship will contribute to productive use of graduates for economic and social development.

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Early Childhood Care and Education Component of National Curriculum Framework–2022: A Review

Tamanna Parveen* and Aerum Khan**

ECCE has a global scope, and caring for and educating young children has always been an integral part of Human Societies. The significant expansion of ECCE services began in the 1960s with considerable growth in women's participation in the extensive development of child and family policies in Europe and the US. This Study is focused on analyzing the National Curriculum Framework-2022 for the Foundational stage concerning Early childhood care and education in a critical way. The methodology includes reviewing articles related to the Foundational stage, reviewing educational policies related to the Foundational stage and content analysis of the National Curriculum Framework – 2022 for the Foundational stage. Recently we received the National Curriculum Framework -2022 for the Foundational stage, which provides us ample possibilities to strengthen education at Foundational stage. With the help of the findings received from the study, the researchers will try to provide input to the policymakers and stakeholders of education. The curriculum meets a key focus area of the NEP-2020. It emphasizes on play-based learning, multilingualism, and socio-emotional development to enhance pedagogical practices and address diverse learning needs. It prioritizes holistic development, inclusivity, and learner-centric approaches. At the end of the study, it was determined that the National Curriculum Framework-2022 for Foundational Stage represents a pivotal advancement in early childhood education. Its emphasis on holistic development, inclusivity, and learner-centric approaches through play-based learning, multilingualism, and socio-emotional development holds immense potential for improving educational outcomes. However, the successful implementation of the NCF hinges on overcoming challenges such as resource constraints and capacity-building requirements. Moving forward, concerted efforts from policymakers, educators, and stakeholders are essential to realize the NCFFS's vision of equitable, inclusive, and quality early childhood education.

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Early Childhood Care and Education

The first eight years of a child's life are truly critical and lay the foundation for lifelong well-being, and overall growth and development across all dimensions - physical, cognitive, and socio-emotional.

Indeed, the pace of brain development in these years is more rapid than at any other stage of a person's life. Research from neuroscience informs us that over 85% of an individual's brain development occurs by the age of 6, indicating the critical importance of appropriate care and stimulation in a child's early years to promote sustained and healthy brain development and growth. In particular, it is only at about the age of 8 that children begin to adapt to more structured learning. Early Childhood Care and Education (ECCE) is thus generally defined as the care and education of children from birth to eight years.

Guiding Principles for the Foundational Stage Based on NEP–2020

a. Every child is capable of learning regardless of the circumstances of birth or background.

b. Each child is different and grows, learns, and develops at their own pace.

c. Children are natural researchers with great observational skills. They are constructors of their own learning experiences and express feelings and ideas through different representations.

d. Children are social beings; they learn through observation, imitation, and collaboration. Children learn through concrete experiences, using their senses and acting upon the environment.

e. Children's experiences and ways of learning must be acknowledged and included. Children learn best when they are respected, valued, and fully involved in the learning process.

f. Play and activity are the primary ways of learning and development with continuous opportunities for children to experience, explore, and experiment with the environment.

g. Children must engage with material, activities, and environments that are developmentally and culturally appropriate and develop conceptual understanding and problem-solving.

h. Content should be drawn from the experiences of children. The novelty of the content or its challenges should be based on the familiar experiences of children.

i. Content should be suited to the developmental needs of children and should provide several opportunities for fantasy, storytelling, art, music, and play.

j. Equity in issues such as gender, caste, class, and disability should be emphasized in the content.

k. Teachers should facilitate and mediate the learning of the children. Scaffolding should be provided by asking open-ended questions, enabling exploration.

l. Family and community are partners in this process and are involved in multiple ways.

Learning through Play - Conversation, Stories, Toys, Music, Art and Craft

Conversation

Conversations are very important for children's ability to connect with people and things around them. Continuous conversations with children in the classroom help to build relationships of trust.

Storytelling

Stories are a particularly good medium for learning about social relationships, ethical choices, for understanding and experiencing emotions, and becoming aware of life skills. While listening to stories, children learn new words thus expanding their vocabulary, and learning sentence structure and problem-solving skills. Children with very short attention spans concentrate for a longer time while engrossed in a story. Through culturally contextual stories, we can acquaint children with their culture, and social norms and create awareness about their surroundings.

Toy-Based Learning

This is an important sub-set of play-based pedagogy. Young children learn from first-hand experiences and working with actual objects. They try to explore and learn. The classroom environment should cultivate this spirit of exploration through playing with toys and manipulatives. Many local toys are available in every child's surroundings. These should be used as important resources for teaching and learning.

Songs and Rhymes

Children understand different concepts through songs and their vocabulary also expands. Physical movements accompanying the songs enhance gross and fine motor movements, and body movements and gestures help children in understanding concepts. Songs promote interaction among children and lead to cooperation.

Music and Movement

Music is also a strong stimulation for brain development and the formation of synaptic connections. So, following rhythm playing simple musical instruments, and singing should be encouraged. Body movements can accompany claps or rhythm played on a tin box or a *khanjari* (tambourine) or *manjira* (cymbals).

NCFFS's Approach to Language Education and Literacy in the Foundational Stage

a. Since children learn concepts most rapidly and deeply in their home language, the primary medium of instruction would optimally be the child's home language/mother tongue/familiar language (also referred to below as L1) in the Foundational Stage.

b. Children should be exposed to and immersed in multiple oral languages (also referred to as L2 and L3 below) from an early age. Schools will aim to ensure the presence of Teachers, and parents so that at least two or preferably three languages can be present with children on a regular basis.

c. The concept of reading and writing is initially developed through the language R1, which is preferably the home language L1 whenever possible. (We define R1 to be the language in which a child first learns the concept of reading and writing, R2 the second such language, R3 the third such language, and so on.)

d. Once the concept of reading and writing is developed in a child in R1, use of additional scripts can be gradually introduced. The aim is to be an independent reader and writer in R1 by age 8 (Grade 3).

Principles of Pedagogy

Principles of pedagogy underly all decisions related to teaching strategies in the classroom appropriate for the Foundational Stage. The following principles inform classroom planning and instruction:

i. A safe and stimulating environment is fundamental to development and learning at this Stage.

ii. Play is central to learning and development at this Stage.

iii. Nurturing relationships between Teacher and child are the basis of teaching and learning.

iv. Physical development is very important at this Stage.

v. Every child learns at their own pace and learning needs are addressed individually.

vi. Children at the Foundational Stage are most comfortable and learn best in their home language.

vii. Learning experiences in the classroom are deeply connected to children's lives and their contexts.

viii. Learning experiences are designed to build on children's previous understanding.

ix. Classroom processes address all domains of development.

How Can Teachers Build a Positive Relationship with Children?

Some important ways to build such a positive relationship are:

a. Getting to know each child individually.

b. Listening to children

c. Observing children

d. Encouraging children's intuitional responses

e. Recognizing and responding to the emotions and moods of children.

f. Visiting their homes regularly

How Can Teachers Support Children to Learn Better?

Teachers play a critical role in supporting children through many ways, most importantly:

a. Listening

b. Modelling

c. Solving Problems

d. Questioning

e. Provoking

f. Researching

g. Making Children Independent

Organizing the Classroom Environment

a. Seating

i. Classroom seating at the Foundational Stage should be flexible and reflect the pedagogy being used in the class.

ii. Fixed individual seating is not necessary at this Stage. In fact, it could come in the way of both Teacher and children.

b. Creating Vibrant Learning Corners in the Classroom

Learning Corners helps to organize spaces in a way that is inviting, and provokes children's thought, interest, and curiosity.

Teachers play an active role in setting up and maintaining Learning Corners. They are responsible for keeping these Corners attractive and vibrant, and ensuring that they cater to the learning needs of all children.

Teaching-Learning Materials (TLM)

Children in the Foundational Stage are more engaged in learning when they use multiple senses and actively use their hands. From simple toys for play to specific manipulatives for counting and numeracy, a variety of TLM is essential in this Stage.

Along with materials, books play a very important role in developing language and literacy. Having a small but good collection of children's literature completes the TLM set for the Foundational Stage.

Leveraging Technologies

Digital Learning Resources

- ***Interactive Educational Apps*****:** Use of educational apps that offer interactive lessons, games, and activities designed to develop literacy, numeracy, and cognitive skills.

- ***E-books and Digital Libraries*****:** Access to age-appropriate e-books and digital libraries to encourage reading and exposure to diverse content.

Smart Classrooms

- ***Interactive Whiteboards*****:** These allow for dynamic teaching, where educators can incorporate multimedia resources such as videos, animations, and interactive activities into their lessons.

- ***Projectors and Audio-Visual Aids:*** Utilization of projectors to display educational videos and other visual aids that make learning more engaging and easier to comprehend for young children.

Personalized Learning

- ***Adaptive Learning Software*****:** Programs that adjust the difficulty of tasks based on the child's progress, ensuring that each child is learning at their own pace and level.
- ***Learning Management Systems* (LMS):** Platforms that help teachers track individual student progress, identify learning gaps, and tailor instruction accordingly.

Gamification and Educational Games

Incorporating educational games that promote problem-solving, critical thinking, and collaboration among young learners. These games make learning fun and interactive, which is crucial for maintaining the interest of young children.

Teacher Training and Resources

- ***Online Professional Development*****:** Providing teachers with online courses and resources to enhance their skills in using technology effectively in the classroom.
- ***Resource Portals*****:** Creating platforms where teachers can share lesson plans, teaching materials, and best practices for integrating technology into their teaching.

Parental Involvement

Parent Portals and Apps**:** Tools that keep parents informed about their child's progress and ways they can support learning at home. These can include updates on classroom activities, assignments, and educational resources.

Inclusive Education

Assistive Technologies**:** Tools and resources designed to support children with special needs, ensuring that technology is used to create an inclusive learning environment for all students.

Rationale for the Study

Research from across the world on education, neuroscience, and economics demonstrates clearly that ensuring free, accessible, high-quality ECCE is perhaps the very best investment that any country can make for its future.

Brain development is most rapid in the first eight years of a child's life, indicating the critical importance of cognitive and socio-emotional stimulation in the early years.

When the quality of stimulation, support and nurture is lacking, there can be detrimental effects on overall development. The period of early childhood lays the foundation for life-long learning and development and is a key determinant of the quality of adult life.

Learning delays can be greatly reduced with the help of intervention in the early years. Efforts to improve early child development are thus an investment, not a cost. Investing in quality early education helps to promote long-term economic growth of the nation while also helping to target the development of the health, cognitive skills, and character necessary for the future success of the individual.

The purpose of the National Curriculum Framework for the foundational stage is to offer an exhaustive and coherent framework that leads educational practices and curriculum development for children. The National Curriculum Framework for the foundational stage provides a comprehensive and well-curated educational framework that encourages quality education, inclusivity, and holistic development that braces the professional growth of teachers. Objectives of the Study are:

- To cull out the benefits of NCF-FS 2022.
- To do the content analysis of NCF-FS 2022.
- To analyze whether the methods given in the NCF-FS 2022 are child-centered.
- To analyze whether NCF-FS 2022 promotes the personal development of children.

Review of Related Literature

Afreen and Abraham (2023) in their paper on 'Language Development in Early Childhood: NEP 2020' stated that Early Childhood Care and Education (ECCE) is important for overall development of children. Child development has several aspects; language development is one of them which is crucial for proper development of his/her personality. Neglect of this crucial developmental domain in early childhood results in a lifelong deficiency in associated skills and behaviours which would adversely affect children's performance in later years.

Thakur and Tariq (2023) in their paper on ' Pedagogical Approaches for Teaching Early Childhood Students ' stated that examining current pedagogical approaches in early childhood education is the purpose of this paper. The learner-centred pedagogy is also included in the new pre-school education curriculum for the foundational stage (3-8 years), hence the initial purpose of this paper is to identify the various pedagogies now being used in the classroom. The learning and developmental successes during early childhood, preschoolers have been linked closely to pedagogical practice. Children's creativity, problem-solving abilities, critical thinking abilities, learning dispositions and socio-emotional or behavioural development abilities may all be enhanced by child-centred pedagogy.

Surbhi Chawla (2023) in their paper on ' Study of Effectiveness of SCERT Pre-Primary Curriculum ' stated that, this study aims at underlining the impact assessment of the effectiveness of SCERT's Pre-Primary curriculum being implemented for three years successfully across 450 of the Sarvodaya Vidyalayas under the department of education (Department of Education). The study has focused on examining the effectiveness of the teachers to transact the curriculum in the mentioned levels of early childhood. It is a Qualitative study and Descriptive in nature. Document Analysis of 'National Curriculum Framework 2022 at Foundational Level With Respect To Early Childhood Care and Education' will be done with the help of self-review. Self-observation of the Document will be done.

Findings

- The National Curriculum Framework for Foundational Stage 2022 mentions a key focus area of the National Education Policy (NEP) 2020, to improve the foundational skills of students.
- The new framework includes the *'panchakosha'* concept for the education of children aged 3 to 8, with five components -

a) Physical development *(sharirik vikas),*

b) Development of life energy *(pranik vikas),*

c) Emotional and mental development *(manasik vikas),*

d) Intellectual development (*bauddhik vikas),* and

e) Spiritual development (*chaitsik vikas).*

- It provides for the holistic overall transformation of the curriculum of the ECCE that will enable a *positive transformation of the school education* system of India, including pedagogy.
- It uses *'play'* at the core of the approaches to curriculum organization, as children learn best through play.
- Hence, NCF will enable the achievement of Foundational Literacy and Numeracy for all children.
- The NCF will deal with the *role of teachers as well as parents and communities* to achieve developmental outcomes that are sought during this stage.
- In particular, the NCF does not just refer to changes in curricular content and pedagogy but also *includes school environment and culture* that will enhance the overall learning process.
- The Framework describes that children *between three and six years* learn best through doing activities such as talking, listening, using toys, drawing, singing, dancing, etc.
- Therefore, the teaching material now readied by the NCERT requires teacher engagement to not only be "textbook-free", but *also based on toys, puppets, playbooks and story cards.*
- *Specifically for literacy* it emphasizes oral language development, word recognition, reading, and writing and for *numeracy,* it will need to focus on oral math, the teaching of skills, math games, and practicing skills.
- It will also *leverage technology and provide QR codes* to enable teachers to access teaching resources such as poems, story books and flashcards.

Conclusions

The NCFFS 2022 is a much-needed update to the previous versions of the framework. It is a comprehensive and inclusive document that seeks to transform early childhood education in India by emphasizing the importance of play-based learning, child-centric teaching approaches, and holistic development. The NCFFS 2022 aims to address the gaps and challenges in early childhood education

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Guru-shishya Parampara: The Present Scenario Reflecting the Change in View of Today's Environment in India

Nidhi Srivastava*, Ramnivas Sharma and Manoj K Tiwari*****

The *Guru-Shishya Parampara* is an ancient Indian tradition that embodies the sacred relationship between a teacher *(guru)* and a disciple *(shishya*). Rooted in the Vedic system, it focuses on holistic education, encompassing spiritual, intellectual, and moral development. The *guru* is more than an instructor; they serve as a mentor guiding the student through life's challenges, imparting not only academic knowledge but also wisdom and cultural values. By this article, the authors tried to discuss the changing environment of the above relation in the present scenario.

The *Guru-Shishya Parampara*, the ancient Indian tradition of teacher-disciple relationship, has been a cornerstone of India's cultural and educational heritage. This relationship was not merely academic but spiritual, emotional, and cultural, forming the bedrock of knowledge transmission in areas ranging from philosophy, art, and music to the sciences and the practical aspects of daily life. However, over the centuries particularly in the modern context, the nature of the Guru-Shishya tradition has transformed dramatically. This article will try to explore the reasons behind the changing dynamics of this relationship in contemporary India and the implications of these changes.

Historical Context of *Guru-Shishya Parampara*

Traditionally, the *Guru-Shishya* relationship was deeply rooted in the ancient Vedic system, where the student *(Shishya)* would live in the Guru's ashram or gurukul, receiving holistic education in a variety of subjects. The guru was seen not only as a teacher but as a mentor, a guide who led the disciples towards enlightenment, wisdom, and a meaningful life. The learning process was personalized, with an emphasis on spiritual growth alongside academic learning. Knowledge was often transmitted orally, and the disciple's role was to serve and honor the guru, reflecting the deep respect and reverence given to the teacher. The system also stressed the importance of character building, moral values, and life skills, making the *Guru-Shishya Parampara* a powerful medium for preserving and passing down the essence of Indian culture and traditions.

The Influence of Colonization and Western Education

The major turning point in the transformation of the *Guru-Shishya Parampara* came with British colonization in the 19th century. The British education system, which emphasized formal, institutionalized, and standardized education, began to replace the traditional methods of learning. With the introduction of universities, schools, and colleges, the process of education became more structured and less personalized. The focus shifted from holistic development to academic proficiency, with an increasing emphasis on written exams, textbooks, and degrees. This formal system significantly diluted the personal relationship between the teacher and the student. Teachers became mere transmitters of information rather than mentors guiding students in all aspects of life. The introduction of Western ideals and a growing emphasis on industrialization and scientific knowledge led to the sidelining of traditional practices.

Technological Advancements and the Internet Age

In the 21st century, technological advancements have further revolutionized education in India, further altering the Guru-Shishya dynamic. The internet, social media, and the rise of online education platforms have made information accessible to anyone with an internet connection. This democratization of knowledge has dramatically reduced the dependence on a single teacher or mentor. Now, students can access knowledge from multiple sources, learn at their own pace, and even challenge traditional forms of authority.

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The role of the guru, in this sense, has been diluted because the internet now serves as a repository of knowledge that is available at the click of a button. In this digital world, where information is abundant, the guru is no longer the sole custodian of wisdom. Teachers today are often facilitators, guiding students on how to sift through the ocean of information rather than being the origin of knowledge itself.

Changing Cultural Values and Globalization

Another significant factor contributing to the transformation of the *Guru-Shishya Parampara* is the broader socio-cultural changes brought about by globalization. With globalization, India has become increasingly connected to the world, leading to a cross-cultural exchange of ideas, lifestyles, and values. Modern-day India has experienced a shift toward individualism, where personal achievement and success are often prioritized over collective cultural values.

The respect and reverence traditionally accorded to *gurus* has diminished with teachers today often being viewed as service providers rather than revered mentors. The commodification of education has led to a transactional relationship between teachers and students, where education is seen as a product to be bought and consumed rather than a lifelong, sacred journey guided by a mentor. Moreover, the rapid pace of life and the growing pressure to succeed in competitive environments have led to a shift in the focus of education from spiritual and moral growth to career-oriented and skill-based learning. Students today often see education primarily as a means to secure employment, and the time-honoured tradition of spending long periods in deep learning under the guidance of a guru has become impractical.

Institutionalization and Formalization of Education

The rise of formal institutions and standardized educational frameworks has significantly altered the traditional role of the *guru.* In today's educational system, most teachers are part of structured institutions like schools, colleges, and universities, which follow a set curriculum and time-bound courses. The personal, one-on-one mentorship of the past has been replaced by classroom-based education, where the focus is often on grades, examinations, and certificates rather than personal growth. In addition, the institutionalization of education has led to a professionalization of teaching. Teachers are now required to follow a syllabus, adhere to regulations, and meet the demands of the institution. This shift has led to a more formal and transactional relationship between teachers and students, in contrast to the intimate, long-term bond characteristic of the Guru-Shishya Parampara.

Commercialization of Education

The commercialization of education is another significant reason for the decline of the Guru-Shishya tradition in India. Education has increasingly become a business, with private schools, coaching centers, and online platforms turning into profit-driven enterprises. The commercialization of education has transformed the student-teacher relationship into a consumer-service provider dynamic. The sacred bond of respect and devotion between the guru and the disciple has, in many cases, been reduced to a financial transaction.

This commercialization has also led to a situation where knowledge is commodified, and students are often viewed as customers. The focus is on providing quick results, often at the expense of deeper, more meaningful education. In this scenario, the role of the guru as a mentor and spiritual guide has been marginalized.

The Shift in Spiritual Education

Even in the spiritual domain, where the *Guru-Shishya Parampara* was most deeply embedded, there has been a shift. Spiritual gurus today often have a large number of followers rather than a small, dedicated group of disciples. The traditional close-knit relationship is now rare, with gurus often reaching out to masses through television, books, and social media. Spiritual guidance has also become commodified, with many spiritual leaders becoming public figures, reducing the scope for personal mentorship.

This mass approach, while making spiritual teachings more accessible, has altered the nature of the guru-disciple relationship. The personal, direct transmission of knowledge and values has become more generalized and less intimate, further transforming the essence of the Guru-Shishya Parampara.

Conclusion

In conclusion, the Guru-Shishya Parampara has undergone significant transformation in modern India due to several factors, including colonization, technological advancements, globalization, institutionalization, commercialization, and changing cultural values. While the essence of the guru as a guide and mentor remains relevant, the personalized, intimate nature of the relationship has been diluted. However, this does not mean that the *Guru-Shishya* tradition is extinct. It has evolved and adapted to modern circumstances, with its spirit continuing in different forms. While the challenges are evident, the core values of this tradition respect, dedication, and the pursuit of knowledge still resonate in various ways, even in today's fast-paced and digitally-driven world.

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and ensure that every child in India receives a high-quality education that will prepare them for success in the future. With the implementation of the NCF 2022, we can hope to see a significant positive impact on the lives of children and their families, as well as the overall development of India as a nation.

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The Role of Education in Nation-building

T G Sitharam, Chairman, All India Council for Technical Education, New Delhi delivered the Convocation Address at the 19th Convocation Ceremony at the ICFAI University Tripura on September 21, 2024. He said, "As graduates, you are now part of a very critical segment of society—the educated workforce. The future of India rests in your hands, in your ability to innovate, to work with integrity, and to bring about meaningful change in the world. I urge you to think about how you can contribute to the country's economy and society. Whether you choose to work in the private sector, public sector, or start your venture, always keep in mind that your work can—and should—have a positive impact on the lives of others." Excerpts

It is indeed a matter of immense pride and honor for me to be here today on this momentous occasion of the convocation ceremony of ICFAI University, Tripura. This is a day of celebration, where we witness the culmination of years of hard work, perseverance, and determination. To each one of you graduating today, I extend my heartfelt congratulations! You have made not just yourselves proud, but also your families, your teachers, and everyone who has stood by you in your academic journey.

Before we move further, let me take a moment to acknowledge the pivotal role played by your teachers and parents. Education is not a solitary journey; it is a collective effort. To the faculty of this esteemed university, thank you for shaping these young minds with your wisdom, for instilling in them a thirst for knowledge, and for being their mentors through thick and thin. To the parents and guardians, your sacrifices, your unwavering support, and your belief in your children have been the foundation of their success today. This achievement belongs as much to you as it does to them. Let us all applaud their contribution.

To the graduates, today is a day that you will remember for the rest of your lives. The journey you started years ago has reached a significant milestone, but it is not the end—it is a new beginning. You have been equipped with knowledge, skills, and values. Now it is time for you to take these learnings into the world and make a difference, not just for yourselves but for society and the nation.

Graduating with a degree is indeed a personal achievement, but education comes with a responsibility— a responsibility that goes beyond individual success. You have been fortunate enough to receive quality education, an opportunity that many in our country still aspire to have. Now, as you move forward, it becomes your duty to use this education to uplift not just yourselves but also those around you, and in turn, contribute to the larger goal of nation-building.

India is a young country, with over 65% of the population under the age of 35. This demographic dividend is our strength, but only if we channel it correctly. As graduates, you are now part of a very critical segment of society—the educated workforce. The future of India rests in your hands, in your ability to innovate, to work with integrity, and to bring about meaningful change in the world. I urge you to think about how you can contribute to the country's economy and society. Whether you choose to work in the private sector, public sector, or start your venture, always keep in mind that your work can—and should—have a positive impact on the lives of others.

We are living in a time of rapid technological advancements. In today's world, what you have learned in your classrooms over the past few years is just the beginning. The pace of innovation and technological evolution is unprecedented. In the last decade alone, we have witnessed the rise of artificial intelligence, machine learning, blockchain, biotechnology, and so many other disruptive technologies. The world of work is evolving every day, and the skills required today may not be the same tomorrow.

This brings me to a very important point—lifelong learning**.** The knowledge you have gained so far is a solid foundation, but to remain relevant in this fast-changing world, you must commit to continuous learning. Embrace technology, stay updated with the latest trends, and most importantly, never stop acquiring new skills. The beauty of today's world is that learning has no boundaries. Whether through online platforms, peer networks, or advanced degrees, make sure you keep learning throughout your life. This will not only help you in your personal and professional growth but will also enable you to contribute to the development of India on the global stage.

As graduates, you are stepping into the professional world at a very exciting time. India today is a land of immense opportunities. Under various initiatives launched by the government, like *Make in India, Digital India, Skill India, and Startup India***,** new doors are being opened for young professionals like yourselves. The economy is growing at a rapid pace, industries are expanding, and technological innovations are transforming every sector. Whether it's healthcare, agriculture, technology, or manufacturing, every sector is ripe with opportunities for young minds with new ideas.

India is not just an emerging economy; it is a powerhouse of talent, creativity, and innovation. The global community is looking at India for solutions to some of the most pressing problems of our time—whether it's in the field of clean energy, digital transformation, or healthcare. I want you to believe in your potential and the potential of this great nation. You have been given the education, and now use it to harness the abundant opportunities that India offers. Create something new, something valuable, something that can change the course of the future.

While speaking about opportunities, let me emphasize the unique potential of the North East region. The North Eastern states have always been known for their rich cultural heritage, their biodiversity, and their natural beauty. But today, they are emerging as centers of excellence in education, entrepreneurship, and innovation.

Prime Minister Narendra Modi has a deep commitment to the development of the North East. His government has undertaken numerous initiatives to bring this region to the forefront of India's growth story. From improving connectivity through roads, railways, and airports, to setting up new colleges, universities, and research institutions—there has been a remarkable transformation in the last decade. The government's focus is not only on infrastructure but also on empowering the youth of the Northeast by providing them with access to quality education, skill development programs, and employment opportunities.

New universities, technical institutions, and research centers have been established across the region to ensure that the youth of the North East are well-prepared to compete on both national and international platforms. Today, you are part of this incredible growth story, and it is your responsibility to carry it forward.

The people of the North East have always been resilient, talented, and hardworking. Today, they are excelling not just within the country but also on the global stage. Take for example Mary Kom, the legendary boxer from Manipur, who has made India proud time and again on international platforms. She is a symbol of the strength, determination, and talent that this region holds.

In the field of education and technology, people from the North East are making their mark globally. There are numerous success stories of engineers, doctors, researchers, and entrepreneurs from the North East who are excelling not just in India but also abroad. From building start-ups in Silicon Valley to contributing to research in cutting-edge technologies, people from this region are showcasing their talent and potential to the world.

As you step out of the gates of ICFAI University today, remember that the world is full of possibilities. Your degree is not just a certificate; it is a key to endless opportunities. You are graduating in a country that is poised to become a global superpower. The dreams you hold today have the power to shape not only your future but also the future of this nation.

Stay committed to your values, work hard, and most importantly, remain humble in your success. Be proud of where you come from and use your education to make a meaningful impact in the world. Whether you choose to work in the corporate sector, start your own business, or contribute to research and development, always remember that your success is tied to the success of the nation.

On behalf of AICTE and myself, I extend my best wishes to all of you. May you have a successful and fulfilling career ahead. May you rise to the challenges, seize the opportunities, and always remember that your education has equipped you not just to succeed but to lead.

Congratulations once again, and may you shine brightly in whatever path you choose!

Jai Hind! ❑

CAMPUS NEWS

National Workshop on Advanced Research Methodology and Statistical Analysis

A three-day National workshop on 'Advanced Research Methodology and Statistical Analysis for Social Science' was organized by the Department of Economics, GTN Arts College, Dindigul, Tamil Nadu, recently. The Event was sponsored by ICSSR-SRC, Hyderabad. During his welcome address, Director of the Event, Dr. P Ravichandran, Associate Professor and Head, GTN Arts College, Dindigul, Tamil Nadu highlighted the crucial role played by research in promoting academic excellence in a higher education institution.

Dr. S Sujatha, Associate Professor and Head-cum-Workshop Co-Director explained the importance of the event for young researchers to be abreast of the latest developments in the methodology of research analysis and publish as many articles as possible in peer-reviewed journals. The Presidential Address was delivered by Dr. P Balagurusamy, Principal, GTN Arts College, Dindigul. He insisted the participants contribute quality research for betterment of the higher education.

Prof. S Ramaswamy, Advisor GTN Group of Institutions delivered the Keynote Address. In his address, he insisted young researchers involve themselves in researching various social issues and come out with valuable suggestions for policymakers. Felicitation was given by Dr. Durai Rethinam, Director, GTN Arts College, Dindigul and Dr. M Ponniah, GTN Arts College, Dindigul. Lion. Dr. K Rethinam, Secretary and Correspondent of the college inaugurated the event. He appreciated the faculty and participants for organizing a very useful programme for enhancing quality research.

Dr. V Mohanasundaram, Associate Professor and Head, PSG College of Arts and Science, Coimbatore handled the session on 'Introduction to Social Science Research, Concept Mapping and Formulation of Research Problem'. He explained that social science research, the scientific method applied to social sciences, includes a variety of research approaches, tools, and techniques for collecting and analyzing qualitative or quantitative data. These methods include laboratory experiments, field surveys, case research, ethnographic research, action research, and so forth. He also explained Concept Mapping and Formulation of the Research Problem.

Dr. C Paramasivan, Associate Professor and Research Advisor, Thanthai Periyar Government Arts and Science College, Trichy headed the next session. He gave an overview of the literature review/ problem identification, sources, and criteria. The session applied more focus on how to review the literature and find the critical parts and gaps in the research process, the sampling process of research, and the steps to be undertaken while pursuing research. Conceptual facts related to sampling techniques and their classification into probability and non-probability sampling were clarified. Biases associated with determining sample design were explained and discussed in detail. He elaborated on the technical aspect of writing citations and referencing that every researcher needs to know. He conveyed to the participants how to write the format that must be followed in citing books, journals, articles, websites, case studies, reports, international and national documents and periodicals, single author to many others through APA style. The speaker elaborated distinctive features of qualitative research designs, and important operational steps of qualitative data collection methods in brief.

Dr. P Karthikeyan, Associate Professor, Department of Manager Studies, Kongu Business School, Erode spoke on 'Primary and Secondary Data Collection, Coding of Question and Pre Testing and Pilot Testing'. According to him, primary data refers to the original data that has been collected specially for a particular purpose in the mind. Each type has its weaknesses and strengths. He said that the primary data is gathered by people who can focus directly on the purpose in mind. This ensures that questions are meaningful to the purpose but can introduce bias in those same questions. Further, the secondary data doesn't have the privilege of this focus but is only susceptible to bias introduced in the choice of what data to reuse.

Dr. P Balasubramanian, Assistant Professor in Statistics, Thanthai Periyar Government Arts and Science College, Trichy. He spoke on 'Frequency Distribution t-Test, z-Test, ANOVA, Correlation, Regression and Cluster Analysis'. He explained that one can use the one-sample t-test to compare the mean of any variable measured on the subjects to a constant. Once you create this variable you can use a one-sample t-test to see if the mean difference score is significantly different from a constant. The most common way to determine whether there are differences in the means of a continuous DV across a set of three or more groups is to perform an Analysis of Variance (ANOVA). There are many different types of ANOVAs.

Dr. P Chandrasekar, Assistant Professor of Economics, PSG College of Arts and Science, Coimbatore delivered his lecture on Discriminant Analysis, Factor Analysis and AMOS SEM Models, Multi-dimensional Scaling, and GLM Univariate Analysis and explained how often factor analysis is used in data reduction to identify key factors the explain most of the variance observed in much large number of manifest variable. On the other hand, he taught basic concepts of regression and structural equation modeling. He extended his session by explaining the equations of SEM and taught how to interpret the equation of multiple regressions using SPSS and explained how to find out the relationship between constructs and items in the measurement model and find the relation between construct and structural modal. He also gave an introduction to AMOS and explained the basic tools. He also gave hands-on experience in AMOS and elaborated on observed variables, unobserved variables, error term factor variance, and factor loading.

Dr. K Ramasamy, Librarian, MVM Government Arts College for Women handled the session on 'Reliability Checking, Hands-on Training (SPSS) and Checking Plagiarism'. The term reliability in psychological research refers to the consistency of a research study or measuring test. If findings from research are replicated consistently, they are reliable. Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgment. Plagiarism may be intentional reckless, or unintentional. If you insert a source's words into your writing, verbatim, one of the simplest yet obvious ways to avoid plagiarism is by using quotation marks around the text to denote that the words aren't your own, he said. A direct quote should also cite the source so that readers know who the quote is from. He also explained the types of Plagiarism, Source-based Plagiarism, Direct Plagiarism, Self or Auto Plagiarism, Paraphrasing plagiarism, Inaccurate Authorship, Mosaic Plagiarism, and Accidental Plagiarism.

The Valedictory Address was delivered by Dr. N Markkandeyan, Academic Director. It began with a brief outline of the sessions of the event. Followed by a brief feedback session from the participants. All participants expressed their satisfaction and overall coordination during the event. The Certificates were presented to the participants by the college Director, Dr. Durai Rethinam. The event was concluded with a Vote of Thanks proposed by Dr. R Balasubramani, Co-Director of the event.

International Conference on Artificial Intelligence in Healthcare, Education and Industry

A two-day International Conference on 'Artificial Intelligence in Healthcare, Education and Industry' is being organized by the Faculty of Engineering and Technology, Datta Meghe Institute of Higher Education & Research (Deemed to be University), Wardha from November 29-30, 2024 through hybrid mode. The Students, Academician, Researchers, Scientists, Entrepreneurs from Industry, Academia and the Healthcare Sector may participate in the Event. The event will bring together Experts, Researchers, Professionals and Stakeholders from around the globe to explore and discuss the transformative potential of Artificial Intelligence (AI) in key sectors. It will be a platform for sharing groundbreaking research, innovative applications, and best practices in utilizing AI technology to address challenges and opportunities in healthcare, education, and industry.

AI is making a massive impact on Education, Industry, and Healthcare. In education, AI technologies are redefining teaching and learning paradigms, enabling personalized learning experiences, adaptive assessments, and intelligent tutoring systems. In healthcare, AI is revolutionizing patient care, diagnostics, treatment planning, and healthcare delivery. From predictive analytics and personalized medicine to medical imaging and telemedicine, AI-powered solutions are reshaping healthcare delivery and improving outcomes for patients worldwide. In industry, AI is driving innovation, efficiency, and competitiveness across various sectors, including manufacturing, finance, retail, and beyond. The Subthemes of the Event are:

AI for Healthcare

- **Precision Medicine and Diagnosis**: AI-powered tools for personalized treatment plans, disease prediction, and early diagnosis.

- **Medical Imaging and Analysis**: Using AI to automatically analyze X-rays, MRIs, and other scans for faster and more accurate diagnoses.
- **Robotic-assisted Surgery and Rehabilitation**: AI-powered robots for minimally invasive surgery, improved surgical precision, and automated rehabilitation programs.
- **Drug Discovery and Development**: Leveraging AI to accelerate drug discovery, predict drug efficacy, and personalize medicine development.
- **Mental Health and Wellbeing**: AI-powered chatbots and apps for mental health support, early intervention, and personalized therapy.
- **Population Health and Epidemiology**: Utilizing AI for disease outbreak prediction, resource allocation optimization, and personalized public health interventions.
- **Healthcare Data Security and Privacy**: AI-driven solutions for protecting patient data privacy, mitigating cybersecurity risks, and ensuring data responsible use.
- **Telehealth and Remote Care**: AI-powered platforms for virtual consultations, remote patient monitoring, and improved access to healthcare in underserved areas.
- **Clinical Decision Support Systems**: AI-powered tools to assist healthcare professionals in making informed decisions based on patient data & evidence-based guidelines.
- **AI for Personalized Nutrition and Healthcare Management**: Developing AI-driven tools for personalized dietary recommendations, lifestyle interventions, and chronic disease management.

AI for Education

- **Personalized Learning and Adaptive Systems**: AI-powered platforms that adapt to individual student needs, learning styles, and pace.
- **Intelligent Tutoring Systems and Virtual Assistants**: Utilizing AI to create personalized learning experiences, provide individualized feedback & offer virtual learning companions.
- **AI-assisted Content Creation and Delivery**: Leveraging AI to personalize learning materials, develop interactive content, and automate content delivery.
- **Assessment and Evaluation**: AI-powered tools for automated grading, personalized feedback generation, and early identification of learning difficulties.
- **Accessibility and Inclusion**: AI solutions for supporting students with disabilities, customizing learning experiences, and promoting inclusive education.
- **Language Learning and Language Instruction**: Using AI to personalize language learning, provide real-time feedback & develop adaptive language instruction tools.
- **Educational Robotics and AI for STEM Education**: Integrating robotics and AI into STEM education to provide engaging and interactive learning experiences.
- **AI-powered Assessment and Career Guidance**: Developing AI-driven tools for personalized career advice, skills assessment, and future job market trends analysis.
- **Educational Data Analytics and Insights**: Utilizing AI to analyze educational data, identify trends, improve learning outcomes, and personalize educational pathways.
- **AI for Early Childhood Education and Development**: Developing AI-powered tools for personalized early childhood education, language development support, and early identification of developmental delays.

AI for Industry

- **Predictive Maintenance and Smart Manufacturing**: AI-driven solutions for predicting equipment failures, optimizing maintenance schedules & improving production efficiency.
- **Quality Control and Defect Detection**: Utilizing AI for automated visual inspection, anomaly detection, and ensuring product quality control.
- **Supply Chain Management and Logistics**: Leveraging AI to optimize supply chains, predict demand, and automate logistics processes.
- **Robotics and Automation**: Developing intelligent robots for industrial tasks, automation of repetitive processes, and enhancing worker safety.
- **Cybersecurity and Threat Detection**: Using AI to detect cyber threats, prevent security breaches, and protect industrial systems.
- **Energy Optimization and Smart Grids**: Applying AI to optimize energy use, forecast

demand, and manage smart grids for efficient energy distribution.

- **Personalized Marketing and Customer Service**: Implementing AI for targeted advertising, personalized recommendations & chatbots for improved customer service.
- **Financial Services and Fraud Detection**: Leveraging AI for automated risk assessment, personalized financial advice, and fraud detection in financial transactions.
- **Agriculture and Precision Farming**: Developing AI-powered solutions for crop yield prediction, disease detection, and resource optimization in agriculture.
- **AI for Environmental Sustainability**: Utilizing AI to monitor environmental changes, optimize resource use, and develop sustainable solutions for various industries.

For further details, contact Organising Secretary, Faculty of Engineering and Technology, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Sawangi (Meghe), Wardha-442107, Maharashtra, Mobile No: 09975281500 / 09420063262, E-mail: *conference.feat@dmiher.edu.in / chetanp.feat@dmiher.edu.in /palashg.feat@dmiher.edu.in.* For updates, log on to: *https://www.dmiher.edu.in/IDICAIEI2024/index.php*

International Conference on Intelligent Computing Technologies and Research

A two-day International Conference on 'Intelligent Computing Technologies and Research' is being organised by the Department of Computer Science and Engineering, National Institute of Technology, Puducherry from December 05-06, 2024 through hybrid mode. The theme of the Event is 'Revolutionizing Smart Sustainable Systems'.

The rapid progress in science, information, and technology is reshaping our world. In this digital age, smart devices, networks, and immersive technologies have seamlessly integrated into everyday life. Technologies such as the Internet of Things (IoT), Augmented Reality (AR), Virtual Reality (VR), Artificial Intelligence (AI), and Cybersecurity are advancing rapidly, prioritizing human convenience over environmental concerns. The Event aims to unite researchers from around the globe to exchange ideas, collaborate, and promote research in various areas, including smart automation with sustainability at its core. The Tracks of the Event are:

Track 1: AI Systems

- Machine Learning Algorithms and Models.
- Deep learning Architectures and Techniques.
- Reinforcement Learning and Autonomous Agents.
- Natural Language Processing (NLP) and Understanding.
- Generative Adversarial Networks (GANs).
- Transfer Learning and Domain Adaptation.

Track 2: Network Systems

- 5G and Beyond-5G Technologies.
- Internet of Things (IoT) Networking.
- Software-Defined Networking (SDN).
- Network Function Virtualization (NFV).
- Cloud Networking.
- Edge Computing and Networking.
- Wireless Sensor Networks (WSNs).
- Security and Privacy in Networks.
- Network Performance Optimization.

Track 3: Internet of Things (IoT) Systems

- Edge Computing for Internet of Things.
- Security and Privacy in Internet of Things.
- Internet of things (IoT) in Data Analytics.
- Internet of Things (IoT) in Interoperability.
- Energy-Efficient Internet of Things (IoT).

Track 4: Cyber Security Systems

- Cryptography and Cryptanalysis.
- Malware Analysis and Detection.
- Intrusion Detection and Prevention Systems (IDPS).
- Network Security and Firewall Technologies.
- Secure Software Development and Code Analysis.

Track 5: Vision Systems

- Image Enhancement.
- Image Segmentation.
- Object Detection and Recognition.
- Image Classification.
- Morphological Image Processing.
- Texture Analysis and Synthesis.
- Remote Sensing Image Analysis.

Track 6: Medical Data Analysis Systems

- Electronic Health Records (EHR) Analysis.
- Clinical Decision Support Systems (CDSS).
- Medical Imaging Analysis.
- Genomic Data Analysis.
- Bioinformatics and Computational Biology.
- Predictive Modelling for Disease Diagnosis and Prognosis.
- Drug Discovery and Pharmacogenomics.
- Patient Monitoring and Remote Health Monitoring.

Track 7: Data Processing Systems

- Data Integration and ETL Processes.
- Data Warehousing and Data Lake Architectures.
- Big Data Storage and Distributed File Systems.
- Data Pipeline Orchestration and Workflow Management.
- Real-Time Data Processing and Stream Processing.
- Data Quality Management and Data Cleansing.

Track 8: Quantum Computing Systems

- Quantum Algorithms and Quantum Complexity Theory.
- Quantum Error Correction and Fault-tolerance.
- Quantum Cryptography and Quantum Key Distribution.
- Quantum Simulation and Quantum Chemistry.
- Quantum Computing Hardware and Architecture.
- Quantum Metrology and Quantum Sensing.

For further details, contact Organisinig Sectary, Department of Computer Science and Engineering, National Institute of Technology Puducherry, Thiruvettakudy, Karaikal, Puducherry- 609609, Mobile No: 09972244997 / 09789612633, E-mail: *icomputer.nitpy@gmail.com*. For updates, log on to: *https://www.nitpy.ac.in › upcommingEvents.*

Workshop on Statistical Techniques for Research Methodology

A five-day Online Workshop on 'Statistical Techniques for Research Methodology' for Research Scholars and Faculties is being conducted by the SQC & OR Unit Indian Statistical Institute, Mumbai from December 10-14, 2024. The Research Scholars and Faculty Members preferably from Engineering and Management streams from any University/Institute and Scientists from Research organizations may participate in the Event.

Applied research is a systematic and purposeful investigation aimed at solving practical problems, improving processes, or advancing knowledge in specific fields or industries. This research is concerned with the direct application of existing knowledge to real-world issues. Statistical techniques in research methodology play a fundamental role in the design, analysis, and interpretation of research studies. These techniques involve the use of mathematical and statistical methods to collect, organize, summarize, analyze, and draw meaningful conclusions from the data. Statistical methods are essential to making informed decisions, drawing reliable inferences, and ensuring the validity and generalizability of research findings. To keep pace with the recent advancements in any discipline, one has to be well-versed with the latest developments in statistical analysis. Keeping in view the importance of statistics in research methodology, the workshop aims to provide knowledge on statistical techniques to research scholars. This workshop is planned for the research scholar pursuing research in various engineering and management streams.

Coverage

- Introduction to Research Methodology and Statistical Techniques.
- Concept and Classification of Data.
- Descriptive Statistics.
- Sampling Strategies.
- Concept of Probability and Probability Distribution.
- Concept and Modeling of Variation using Probability Distribution.
- Hypothesis Testing like t-test, F-test, ANOVA, ANCOVA.
- Categorical Data Analysis Using Contingency Tables, Odds and Odds Ratio.
- Predictive Modeling Using Simple, Multiple Linear and Logistic Regressions.
- Multivariate (PCA, Factor and Cluster) Analysis.

For further details, contact Organising Secretary, SQC & OR Unit Indian Statistical Institute, Room No 320, 3rd Floor Old CGO Building 101 Maharshi Karve Road, Mumbai- 400 020, Phone No: 22014588, Mobile No: 07738479688, E-mail: *info@isimum.ac.in*. For updates, log on to: *www.isimum.ac.in* ❑

AIU Invites Expression of Interest for Collaborative Research Studies in the Session 2024

The AIU has been engaged in conducting policy research in various domains of higher education to support the Government of India in designing policies and to help Indian universities improve their systems. Every year we take up different topics/problems/issues to conduct Research Studies either in-house or in collaboration with one of the member universities. This year we have identified the topic "**Underrepresentation of Women in Leadership Positions: A Critical Study** as a minor research study in collaboration with one of the member universities.

While women make up a significant portion of the academic workforce, their presence in senior leadership roles remains limited. This underrepresentation of women in leadership positions in higher education in India is a critical issue that undermines the potential for academic excellence, innovation, and equity in universities. With concerted efforts, we all need to change the scenario.

We, therefore, invite collaboration from the member Universities/ Institutions to conduct the study as a Minor Research Project. The study is expected to identify the barriers hindering women's advancement in higher education leadership and provide a basis for developing targeted policies and interventions aimed at promoting gender equality.

Terms and Conditions

i. The study will be conducted jointly by AIU and the selected partner university. The details of terms and conditions will be communicated in the selection of the proposal.

ii. The research study is of the current financial year ending on **March 31, 2025**, so the Project should be submitted by the end of February 2025.

iii. The ceiling of funding for the collaborative project shall be a maximum of Rs. 50,000/-. However, the selection of proposals and allocation of funding amount will be decided by a Committee duly constituted for the purpose, after assessing the financial requirements based upon the nature and scope of the project.

iv. Before the commencement of the Project a MoU shall be signed between AIU and the Collaborating institutions.

v. Mere submission of a proposal does not necessarily qualify for selection and financial allocation.

AIU Member universities/institutions interested in conducting collaborative research study are invited to send their Expression of Interest through email in the enclosed proforma duly endorsed by the Vice Chancellor by **October 20, 2024**, to Dr Sistla Rama Devi Pani, Head, Research Division to the E-mail: *researchaiu@gmail.com*. Mobile No: 09582573719 OR 011-23230059 Extn: 240.The details can also be downloaded from AIU Website: *www.aiu.ac.in*

Proforma for Proposal

1. Name of the University………………………………………………………..........................

2. Name of the Researchers/Faculty members associated with their Contact details (E-mail & Mobile) and Experience

   1. ………………………………………………………......……………………….....

   2. ………………………………………………………......……………………….....

   3. ………………………………………………………......……………………….....

3. Rationale of the study. Give an Abstract in 300 words.

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4. The Scope of study in terms of region to be covered, No of Institutes, National/ International.

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5. Data Sources ……………………………………………………………………..........

6. Methodology to be adopted……………………………………………………............

7. Time Lines (Please give month-wise Pert Chart/ Gantt Chart) ………………………....

   ………………………………………………..………………………………

8. Financial Requirements (Please give item-wise details) ……………………………......

   ……………………………………………………………………………………...........

9. Proposed Impact of Study……………………………………………………..............

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Signature of the Principal Investigator

Endorsement of Vice Chancellor

THESES OF THE MONTH

SCIENCE & TECHNOLOGY

A List of doctoral theses accepted by Indian Universities

(Notifications received in AIU during the month of August-September, 2024)

AGRICULTURAL & VETERINARY SCIENCES

Agronomy

1. Chavan, Komal Ankush. **Response of NPK fertilizers to varying time of application and FYM levels in rainfed B*t* cotton**. (Dr. B V Asewar), Department of Agronomy, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhanii.

Food Science & Nutrition

1. Vaid, Nivedhika Rai. **Development and evaluation of low glycemic index multigrain mixes for pre-diabetics**. (Dr. Ranjana Verma), Department of Food Science Nutrition and Technology, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Genetics & Plant Breeding

1. Pachkhande, Dhaneshwari Narayan. **Heterosis, combining ability and stability studies for yield and fibre quality traits in *Desi* Cotton (*Gossypium arboreum* L)**. (Dr. H V Kalpande), Department of Genetics and Plant Breeding, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhanii.

2. Ronika. **Molecular diversity and genetic analysis of seed yield components and disease resistance in soybean [*Glycine max* (L) Merrill]**. (Dr. Vedna Kumari), Department of Genetics and Plant Breeding, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur.

Horticulture

1. Deshmukh, Kalyani Diliprao. **Genetic variability studies in F4 and F5 generation of Okra (*Abelmoschus esculentus* L Moench)**. (Dr. V S Khandare), Department of Horticulture, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhanii.

Plant Pathology

1. Banne, Shridhar Nivas. **Studies on Maize (Zea *mays* L) banded leaf and sheath blight, caused by *Rhizoctonia solani* f sp *sasakii* Exner**. (Dr. A P Suryawanshi), Department of Plant Pathology, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhanii.

2. Kadam, Shruti Sambhajirao. **Studies on exploitation of endophytes for management of chickpea dry root rot caused by *Rhizoctonia bataticola* (Taub) Butler**. (Dr. D G Hingole), Department of Plant Pathology, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhanii.

BIOLOGICAL SCIENCES

Biochemistry

1. Acharya, Sukanya. **Molecular and biochemical characterization of mercury tolerant bacteria from various regions in and around Darjeeling**. (Dr. Malay Bhattacharya), Department of Tea Science, University of North Bengal, Darjeeling.

2. Vasanth, Raj B. **Screening, characterization and biological properties of latex lectins from different species of Artocarpus**. (Dr. G J Sathisha), Department of Biochemistry, Kuvempu University, Shankaraghatta.

Biotechnology

1. Kattaru, Surekha. **In vitro generation of Mesengial cells from Human Hematopoietic Stem Cells**. (Dr. P V G K Sarma), Department of Biotechnology, Sri Venkateswara Institute of Medical Sciences.

2. Prasanna, S Ullas. **Micropropagation and evaluation of antagonistic activity of *Trichoderrma* strains against *Fusarium* Oxysporum F SP cubense causing Panama disease to Musa Paradisica CV Malnad Rasabale**. (Dr. V Krishna), Department of Biotechnology, Kuvempu University, Shankaraghatta.

3. Sodhi, Gurleen Kaur. **Exploration of salinity and drought stress tolerant endophytic fungi for rice cultivation**. (Dr. Sanjai Saxena), Department of Biotechnology, Thapar Institute of Engineering and Technology, Patiala.

4. Vijayalakshmi, V. **System biology prediction and validation of anti-cancer property of AITC**. (Dr. Manjunatha H), Department of Biotechnology, Kuvempu University, Shankaraghatta.

Food Science & Nutrition

1. Aatre, Prashasti. **Association of obesity with urban food environment among adults**. (Dr. Priya Mishra), School of Allied Health Sciences, Manav Rachna International University, Faridabad.

2. Singh, Brij Pal. **Dietary diversity and nutritional assessment in school going children of Roopnagar District (Punjab)**. (Dr. Mahak Sharma), School of Allied Health Sciences, Manav Rachna International University, Faridabad.

Microbiology

1. Nandish, G. **Bioprospecting of polyhydroxy butyrate (PHB) producing bacteria from different sources**. (Dr. B Thippeswamy), Department of Microbiology, Kuvempu University, Shankaraghatta.

Zoology

1. Kaher, Harshit Deepakkumar. **Diversity and ecological assessment of Plankton in Lakhota Lake, Jamnagar, Gujarat**. (Dr. A P Gosawami), Department of Zoology, Saurashtra University, Rajkot.
2. Manikandan, B. **Pollination networks, nutritional status, genetic diversity and phylogenetic relationship of the wild honey bee species in native and invasive plants**. (Prof. G Gurusubramanian), Department of Zoology, Mizoram University, Aizawl.
3. Nur, Ruksa. **Study on protein requirement vis-à-vis the digestive enzyme patterns in Mahseer fingerlings, *Neolissocheilus hexagonolepis* (McClleland)**. (Prof. Sudip Barat), Department of Zoology, University of North Bengal, Darjeeling.
4. Pathan, Samiha Abdul Wahid. **The spatial ecology and conservation of seagrasses of Gulf of Kachchh, Gujarat**. (Dr. K Sivakumar), Department of Wildlife Science, Saurashtra University, Rajkot.
5. Sarabjeet Kaur. **Foraging ecology of Great-Slaty Woodpecker in and around Pawalgarh conservation reserve in Western Himalaya**. (Dr. Gopi G V), Department of Wildlife Science, Saurashtra University, Rajkot.
6. Targe, Kalzang. **Patterns of grazing, natural resources use by local community and their influence on wild ungulate (Ibex) habitats in Pin Valley National Park, Himachal Pradesh**. (Dr. B S Adhikari), Department of Wildlife Science, Saurashtra University, Rajkot.

EARTH SYSTEM SCIENCES

Environmental Science

1. Behera, Prafulla Kumar. **Genetic diversity of indigenous aromatic rice landraces from Koraput, India based on quality traits and multiple stress tolerance**. (Dr. Debabrata Panda), Department of Biodiversity and Conservation of Natural Resources, Central University of Odisha, Koraput.

ENGINEERING SCIENCES

Computer Science & Engineering

1. Aggarwal, Ritu. **Meticulous presaging of heart disease using machine learning**. (Dr. Suneet Kumar), Department of Computer Science & Engineering, Maharishi Markandeshwar University, Ambala.
2. Bhavya. **Design of formal grammar and model for composition of Indian music**. (Dr. Ajay Kumar and Dr. Sunita Garhwal), Department of Computer Science & Engineering, Thapar Institute of Engineering and Technology, Patiala.
3. Deepika. **An enhanced secure integrated framework for cloud environment**. (Dr. Rajneesh Kumar), Department of Computer Science & Engineering, Maharishi Markandeshwar University, Ambala.
4. Jagani, Chirag Ishwarlal. **An efficient way to improve recommendation system in web using advanced modeling techniques**. (Dr. K H Atkotiya), Department of Computer Science, Saurashtra University, Rajkot.
5. Jawale, Anupama Suhas. **Novel approach for sensor data classification in road quality assessment**. (Dr. Ganesh Magar), Department of Computer Science, S.N.D.T. Women's University, Mumbai.
6. Mandal, Amit Kumar. **Understanding the role of text in image Memorability using deep learning techniques**. (Dr. Firos A), Department of Computer Science & Engineering, Rajiv Gandhi University, Itanagar.
7. Patel, Mehul Tansukhbhai. **Effective plate object segmentation and recognition by implementing artificial intelligent model for smart transportation systems**. (Dr. Ashishkumar Parejiya), Department of Computer Science, Indus University, Ahmedabad.
8. Sharma, Bhawna. **An efficient key management protocol for security provisioning in Multicast Routing Protocol over Mobile Adhoc Networks (MANETs)**. (Dr. Rohit Vaid), Department of Computer Science & Engineering, Maharishi Markandeshwar University, Ambala.
9. Wadhawan, Ankita. **Indian sign language recognition system for simple manual signs**. (Dr. Prateek Kumar), Department of Computer Science & Engineering, Thapar Institute of Engineering and Technology, Patiala.
10. Walia, Rubika. **A security aware framework for cloud integrated internet of things**. (Dr. Prachi Garg), Department of Computer Science & Engineering, Maharishi Markandeshwar University, Ambala.

Electrical & Electronics Engineering

1. Deb, Pragati Shrivastava. **Design of reduced order model for a large-scale system**. (Dr. Leena G), Department of Electrical & Electronics Engineering, Manav Rachna International Institute of Research and Studies, Faridabad.

2. Karimulla, Syed. **A novel hybrid-HHOPSO algorithm based optimal control for autonomous microgrid**. (Dr. Ch Ravi Kumar), Department of Electrical & Electronics Engineering, Acharya Nagarjuna University, Nagarjuna Nagar.

3. Katiyar, Vimal. **Modelling and simulation of solar-based hybrid system with DG at multiple locations and impact DG on grid**. (Dr. Mohd Ilyas), Department of Electrical & Electronics Engineering, Al-Falah University, Faridabad.

4. Narayan, Rajesh. **Design and performance analysis of controller for LED driver circuits**. (Prof. Kalyan Chatterjee), Department of Electrical Engineering, Indian Institute of Technology, Dhanbad.

5. Tasneem, Sadaf. **Design and performance analysis of fractional-order filters using current mode building blocks**. (Prof. Rajeev Kr Ranjan and Prof. Sajal K Paul), Department of Electronics Engineering, Indian Institute of Technology, Dhanbad.

Electronics & Communication Engineering

1. Gajjar, Bhavinkumar Dineshkumar. **Sparse based feature parameterization and multi kernel SVM for large scale scene classification**. (Dr. Ashwin Patani and Dr. Hiren K Mewada), Department of Electronics & Communication Engineering, Indus University, Ahmedabad.

2. Singh, Jayant Kumar. **Design of floating gate based circuits emulating neural features**. (Dr. Garima Kapur), Department of Electronics & Communication Engineering, Jaypee Institute of Information Technology, Noida.

Mechanical Engineering

1. Nasim, Mohammad Ashad Ghani. **Performance and emission analysis of diesel engine fueled with non-edible oils with the aid of soft computing**. (Prof. Mohd Parvez and Dr. Osama Khan), Department of Mechanical Engineering, Al-Falah University, Faridabad.

MATHEMATICAL SCIENCES

Mathematics

1. Vyas, Dhaval Mahendrabhai. **Some new aspects of domination and subset related problems in graphs**. (Dr. S K Vaidya), Department of Mathematics, Saurashtra University, Rajkot.

MEDICAL SCIENCES

Ayurveda

1. Ade, Jaykumar Sadashiv. **Estimating- The proportion of Madhumeha (Type II Diabetes Mellitus) among different prakriti at different part of Maharashtra: A cross sectional study**. (Dr. Laxmikant G Joshi), Faculty of Ayurved, Maharashtra University of Health Sciences, Nashik.

2. Bhat, Pravin Madhukar. **Experimental and observational study on the efficacy of Amalaki Rasayan in Adhimanthaj Drishtinash W R T primary open-angle glaucoma**. (Dr. H N Umale), Faculty of Ayurved, Maharashtra University of Health Sciences, Nashik.

3. Boinwad, Vidya Shivram. **A randomized controlled clinical trial of efficacy of Virechana Karma on insulin resistance with special reference to Santarpanjanya Vikar (Medorog)**. (Dr. V E Gogate), Department of Ayurved, Maharashtra University of Health Sciences, Nashik.

4. Chandrakant, Arun Dhanokar. **Efficacy of Shulghna Saptak Vati in the management of postoperative pain in surgeries of inguinal and scrotal region: A randomized controlled trial**. (Dr. Yogesh R Badwe), Faculty of Ayurved, Maharashtra University of Health Sciences, Nashik.

5. Kahalekar, Dhananjay Nilkanthrao. **Study the efficacy of Amalaki (Emblica Officinalis Gaertn) on the process of ageing in healthy volunteers: Randomized controlled clinical trial**. (Dr. Vishwas E Gogate), Faculty of Ayurved, Maharashtra University of Health Sciences, Nashik.

6. Mule, Kavita Chandrashekhar. **Randomized open controlled clinical study to evaluate efficacy of Darvyadighanvati in Asrugdara W S R to puberty Menorrhagia**. (Dr. Jayashree Shrikant Deshmukh), Department of Ayurved, Maharashtra University of Health Sciences, Nashik.

7. Podhade, Suresh Shivajirao. **Study the effectiveness of Cauterization with electro Cautery' as Agnikarma in the management of specific Agnikarma Sadhyas Vyadhies: Randomized controlled clinical trial**. (Dr. Yogesh R Badwe), Faculty of Ayurved, Maharashtra University of Health Sciences, Nashik.

8. Patil, Santosh Fakirgouda. **Evaluation of Jeevanthyadi Ghrita Matra Basti on chemo-radiation induced adverse events in cancer patients**. (Dr. Suhas Kumar Shetty), Faculty of Ayurveda, KLE Academy of Higher Education and Research, Belagavi.

9. Pawar, Gajanan Babulal. **A comparative analytical study of the conventional & contemporary fermenters in the preparation of Drakashasav prepared in three different seasons**. (Dr. C E Lagad), Faculty of Ayurved, Maharashtra University of Health Sciences, Nashik.
10. Suryawanshi, Sharmili Vijay. **Randomised controlled clinical study of Bruhatmarichayaditaila and laghumangishtadivati in vyangaroga W S R to Melasma & Facial Melanosis**. (Dr. V E Gogate), Department of Ayurved, Maharashtra University of Health Sciences, Nashik.

Medicine

1. Thakker, Kosha Natverlal. **Assessment of Sino-Nasal Region: A CT(Computed Tomography) study**. (Dr. Shilpa Parikh), Department of Oral Medicine and Radiology, Gujarat University, Ahmedabad.
2. Yadav, Sanjay Kumar. **Histochemical study of mucopolysaccharides and microscopic structure of osteoarthritic menisci of the human knee joint**. (Dr. V S Shirol), Faculty of Medicine, KLE Academy of Higher Education and Research, Belagavi.

Pharmaceutical Science

1. Chiprikar, Pallavi Raosaheb. **Formulation and characterization of nanostructured lipid carrier intranasal spray of cariprazine using QBD approach**. (Prof. Vinayak Mastiholimath), Faculty of Pharmacy, KLE Academy of Higher Education and Research, Belagavi.
2. Nyamagoud, Sanatkumar Bharamu. **Role of clinical pharmacist interventions in the management of diabetes Mellitus: A randomized controlled study**. (Prof. A H M Viswanathaswamy and Dr. Bharati Kangrali), Faculty of Pharmacy, KLE Academy of Higher Education and Research, Belagavi.
3. Patil, Vishal Shivalingappa. **Virtual screening and experimental validation of bioactive constituents from selected medicinal plants of Western Ghats Region against hepatitis B virus and its associated complications**. (Dr. Harish D R and Dr. S S Jalapure), Faculty of Pharmacy, KLE Academy of Higher Education and Research, Belagavi.
4. Sagare, Revati Dharampal. **Design and characterization of halloysite polymer doped novel drug delivery conjugate**. (Dr. Fatime Dasankoppa), Faculty of Pharmacy, KLE Academy of Higher Education and Research, Belagavi.
5. Shikha. **Synthesis of fullerene loaded Irinotecan drug, delivery for colon tumor targeting**. (Dr. Manu Sharma), Department of Pharmaceutical Science, Maharishi Markandeshwar University, Ambala.
6. Suryawanshi, Shailendra Sanjay. **Development and validation of analytical methods for estimation of selected anti-diabetic drugs: quality by design approach**. (Prof. M S Palled), Faculty of Pharmacy, KLE Academy of Higher Education and Research, Belagavi.
7. Verma, Sahil. **Development of novel nano-conjugates of Laccase for biocatalysis**. (Prof. Joydev K Laha), Department of Pharmaceutical Technology, National Institute of Pharmaceutical Education and Research, Mohali.

Physiotherapy

1. Bhatt, Urmi Jyotindrakumar. **Impact of "Lumbar Segmental Stabilization Exercises" on overall health status and risk of fall in subjects with knee osteoarthritis**. (Dr. Yagna Shukla), Department of Physiotherapy, Gujarat University, Ahmedabad.
2. Kariya, Radhika Dipakbhai. **A study to design a flexibility device for hamstring quadriceps and calf muscles stretching for individual with respective muscle tightness: An experimental study**. (Dr. Gauravi Dhruva), Department of Physiotherapy, Saurashtra University, Rajkot.
3. Khangare, Sarala Gendlal. **Association of bone mineral density and body mass index with balance and mobility in young female adult**. (Dr.Bhavna Mhatre), Department of Physiotherapy, Maharashtra University of Health Sciences, Nashik.
4. Ramdati, Vanita Kanadgar. **Age and gender specific hand grip strength in Indian population**. (Dr. Yagna Shukla), Department of Physiotherapy, Gujarat University, Ahmedabad.

PHYSICAL SCIENCES

Chemistry

1. Desai, Vishv Arvindkumar. **Recognition of various guest analytes using newly synthesized Calixarene Framework**. (Dr. V K Jain), Department of Chemistry, Gujarat University, Ahmedabad.
2. Joshi, Rupal Jigneshbhai. **Studies on new heterocyclic entities of medicinal interest**. (Prof. Atul H Bapodra), Department of Chemistry, Bhakta Kavi Narsinh Mehta University, Junagadh.
3. Niraj Kumar. **Exploring the medicinal values of Enicostemma Littorale Blume using phytochemical and computational approaches**. (Prof. Swapan Dey), Department of Chemistry and Chemical Biology, Indian Institute of Technology, Dhanbad.

4. Sherashiya, Meet Jayantilal. **Studies on new chemical entities having active scaffolds**. (Dr. Y T Naliapara), Department of Chemistry, Saurashtra University, Rajkot.

Physics

1. Bhat, Mohd Aasif. **Exploration of multidimensional applications of Ni doped $PrFeO_3$ systems in organic and inorganic environment**. (Dr. Pooja Rana and Dr. Feroz A Mir), Department of Physics, Sri Sai University, Palampur.
2. Dhiman, Vishal. **Synthesis and characterization of chemically derived Copper based Chalcogenides and applications**. (Dr. Suresh Kumar and Dr. Deepesh Bhardwaj), Department of Physics, Maharishi Markandeshwar University, Ambala.
3. Sharma, Neetu. **Studies on materials and electrical characteristics of natural biomaterials derived from medicinal plants for bio-memory device applications**. (Dr. Milan Kumar Bera), Department of Physics, Maharishi Markandeshwar University, Ambala.
4. Shukla, Rishit Satishprakash. **Design of novel nanowires for electronic and optical applications: A first principles approach**. (Dr. P N Gajjar), Department of Physics, Gujarat University, Ahmedabad.
5. Upadhyay, Madan Murari. **Upconversion emission and optical thermometry studies in Tm^{3+} Er^{3+} and Yb^{3+} ions doped oxide phosphors**. (Prof.Kaushal Kumar), Department of Physics, Indian Institute of Technology, Dhanbad.

❑

Matrubhoomi Pratishthan Shikshan Prasarak Mandal's

Matrubhoomi Mahavidyalaya, Degloor Road Udgir

WANTED

Applications are invited for the post of Assistant Professor to be filled in **Matrubhoomi Mahavidyalaya, Degloor Road Udgir (Permanent Non-Grant) run by Matrubhoomi Pratishthan Shikshan Prasarak Mandal, Udgir Dist-Latur** & affiliated to Swami Ramanand Teerth Marathwada University Nanded. Eligible candidates should submit their applications along - with all necessary documents **within Fifteen days** from the date of publication of this advertisement by Registered post only. Candidates of reserved category should send one copy of application to the Assistant Registrar, Special Cell, S.R.T.M University, Nanded.

Subject	Post	Educational Qualifications	Reservation
Computer Science	4	ENGLISH, B.C.A, B.Sc. (CS), MA. EDUCATION. SET/NET/Ph.D.	Open- 01, SC- 01, VJ (A)- 01, OBC- 01
			Note:- As per Govt. Decision Dated 25/01/2024 Parallel Reservation as Follows: Women- 01

1) Essential qualifications and other information/guidelines for above post is available on university **website: www.srtmun.ac.in.**

Matrubhoomi Prathishthan Shikshan Prasarak Mandal's Matrubhoomi Mahavidhyalaya

Behind LIC Office, Degloor Road, Udgir Tq. Udgir Dist. Latur

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Bhartiya Shikshan Prasarak Sanstha, Ambajogai, Dist- Beed.

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Principal	Arts, Science & Commerce College	01	Full Time Granted	Open to All

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2) This Advertisement is made as per No Objection Certificate from Joint Director (Higher Education) Chatrapati Sambhajinagar Region, Chatrapati Sambhajinagar vide Letter No, JDHE Chatrapati Sambhajinagar/NOC/2024/38/ dated 11.09.2024 & Dr. BAMU Chatrapati Sambhajinagar/Letter No SC/2024/839825/date: 24.09.2024

3) Employed candidates shall apply through proper channel and shall submit No Objection Certificate from the employer.

4) Candidate must get verified A.P.I Score from the University.

5) No. T.A & D.A will be paid for attending the interview.

6) All the posts are transferable among B.S.P. Sanstha's College.

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Sr.No	Post/Subject	No. of Post	Qualifications
1	PRINCIPAL (on tenure basis for a period of 5 years)	1 (Open)	A Master's Degree with at least 55% of the marks or a relevant grade regarded as equivalent to 55% wherever grading system is followed by a recognized University. Ph.D. qualification is concerned / allied / relevant discipline with evidence of published work and research guidance. Associate Professor/Professor with a total experience of 15 years of teaching / research / administration in Universities / Colleges and other institutions of higher education. A minimum score as stipulated in the Academic Performance Indicator (API) based on Performance Based Appraisal System (PBAS) for Professors as developed by UGC in these Regulations.

Note:

1. A minimum of 55 % marks (or an equivalent grade in a point-scale, wherever the grading system is followed) at the Master's level shall be the essential qualification for direct recruitment of teachers and other equivalent cadres at any level.
   1. A relaxation of 5% shall be allowed at the Bachelor's as well as at the Master's level for the candidates belonging to Scheduled Caste/ Scheduled Tribe/Other Backward Classes (OBC)(Non-creamy Layer)/ Differently-abled (a) Blindness and low vision; (b) Deaf and Hard Hearing; (c) Locomotor disability including cerebral palsy, leprosy cured, dwarfism, acid-attack victims and muscular dystrophy; (d) Autism, intellectual disability , specific learning disability and mental illness; (e) Multiple disabilities from amongst persons under (a) to (d) including deaf-blindness) for the purpose of eligibility and assessing good academic record for direct recruitment. The eligibility marks of 55% (or an equivalent grade in a point-scale, wherever the grading system is followed) a relaxation of 5% to the categories mentioned above are permissible, based only on the qualifying marks without including any grace mark procedure. A relaxation of 5% may be provided, from 55% to 50% of the marks to the Ph.D. degree holders who have passed their Masters degree prior to September 19, 1991. A relevant grade which is regarded as equivalent of 55%, wherever the grading system is followed by a recognized university, at the Master's level shall also be considered valid.
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