

6.1.1 - The governance of the institution is reflective of and in tune with the vision and mission of the institution

Vision

To emerge as a learning Center of Excellence in the National Ethos in domains of Science, Technology and Management.

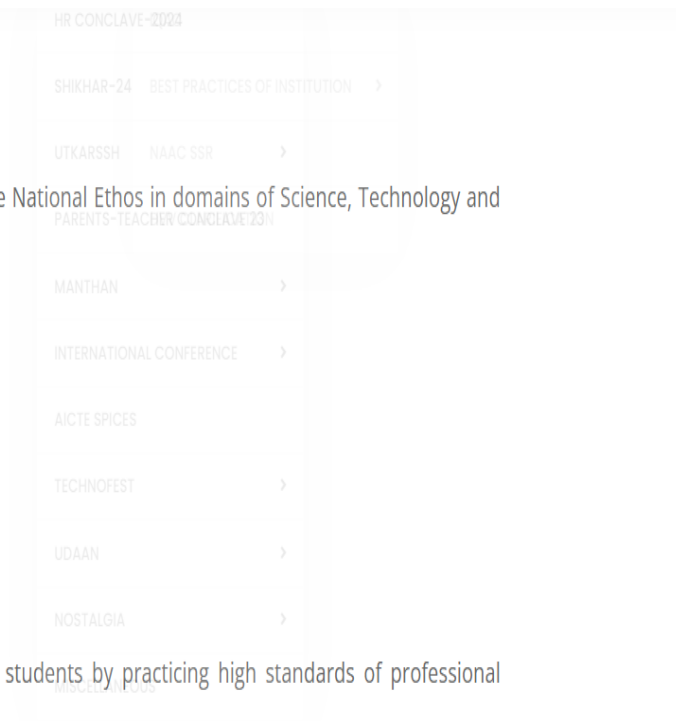
Mission

To strive for rearing standard and stature of the students by practicing high standards of professional ethics, transparency and accountability.

To provide facilities and services to meet the challenges of Industry and Society.

To facilitate socially responsive research, innovation and entrepreneurship.

To ascertain holistic development of the students and staff members by inculcating knowledge and profession as work practices.





Tulsiramji Gaikwad-Patil



College of Engineering and Technology

Wardha Road, Nagpur-441 108, Approved by AICTE, New Delhi,

Govt. of Maharashtra & An autonomous Institute

Affiliated to RTM Nagpur University, Nagpur

NAAC Accredited A+ Grade (3.32)



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STRATEGIC PLAN OF INSTITUTE

2022-2030



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Visionaries

With more than twenty years of experience in education system to his credit, established the Gaikwad- Patil Group of Institutions in Nagpur to cater to the quality education needs of the youth in Vidarbha. His early experience of teaching in an engineering college made him acutely aware of the dissonance between engineering education in the country and the requirements of the industry. He therefore began with a dream of starting an engineering college that equips students with knowledge, skills and attitudes relevant to the industry. That dream has manifested today in the form of two engineering colleges, well known in the region for their constant striving to impart quality and industry-relevant education to their students. Hardly in his early forties, Dr. Gaikwad is the young and dynamic face of the Group. His contagious enthusiasm and unflinching drive are truly inspiring.



**Honorable Dr. Mohan Gaikwad-Patil,
Chairman, Gaikwad-Patil Group,
(PhD. Mathematics)**



**Honorable Mr. Aakash Gaikwad-Patil,
Vice-Chairman, Gaikwad-Patil Group,
(B.E Civil Engineering)**



**Honorable Dr. Anjali Patil-Gaikwad,
President,
Gaikwad-Patil Group of Institutions
(M. Phil. in English Literature Ph.D. in English)**



**Honorable Prof. Sandeep Gaikwad,
Treasurer,
Gaikwad-Patil Group of Institutions
(M. Tech (Structural Engg.), PhD*)**





Institute Vision

“To emerge as a learning Centre of Excellence in the National Ethos in domains of Science, Technology and Management”

Institute Mission

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- To provide facilities and services to meet the challenges of Industry and Society
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Prologue

Tulsiramji Gaikwad-Patil College of Engineering and Technology (TGPCET) was established in the year 2007 by Vidarbha Bahu-Uddeshiya Shikshan Sanstha (VBSS), a registered society. It is a self-financed Private Engineering College, which is affiliated to Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU) Nagpur and is approved by All India Council for Technical Education, New Delhi. Also, college is approved by Directorate of Technical Education (DTE), Mumbai, Maharashtra State. The Institute is Accredited by NAAC with A+ Grade, Bangalore. Furthermore, the Institute has confronted with an Autonomous status from University Grants Commission (UGC) New and from parent university (RTMNU) 01/01/2022.

The College offers four years UG programs in Nine disciplines of engineering viz. Bio-Technology (B.Tech), Aeronautical Engineering (AE), Computer Science and Engineering (CSE), Information Technology (IT), Computer Science and Engineering-Data Science (CSE-DS), Electronics and Communication Engineering (ECE), Mechanical Engineering (ME), Civil Engineering (CE) and Electrical Engineering (EE).

TGPCET offers eight PG programs in engineering viz. Computer Science and Engineering (CSE), Integrated Power System (IPS), Mechanical Engineering Design (MED), Structural Engineering (SE), Electronics and Communication Engineering (ECE), Artificial Intelligence & Machine Learning (AIML), Electric Vehicle Technology (EVT), Aeronautical Engineering (AE), and also offers Two years PG programs in Master of Business Administration (MBA) as well as Two years Master in Computer Application (MCA).

In addition, TGPCET conducts three years Diploma programs in six disciplines of engineering such as Civil Engineering (CE), Mechanical Engineering (ME), Computer Science and Engineering (CSE) Electrical Engineering (EE), Electronics & Communication Engg (ECE) and Information Technology (IT).

Message from Principal:

The Tulsiramji Gaikwad Patil College of Engineering and Technology, Nagpur has distinguished itself among one of the most premier and renowned institute in Central part of India. This institute is well known for its commitment in reaching beyond the boundaries of traditional disciplines in view of innovation and solutions to real-world problems. Our strategic plan honors and expands upon that core strength, aligning the faculties, processes, and priorities around a common vision.

The title of the plan which is “**Expanding Collaboration; Empowering People; Elevating Impact**” expresses our vision for becoming an even more significant contributor of solutions to the Nations problem. We intend to build upon very solid foundation as a world-class engineering college with a distinct identity and a reputation for excellence. Our intent is to give support by our legacy of innovation and collaboration to the society, and is grounded by our core values.

The plan will serve as the measuring stick against which we evaluate our decisions over the next five years. It establishes a common vision of our destination, and defines the route for our journey. It states our commitment strongly to collaborate with our colleagues across disciplines in higher education, government and industry in pursuit of Innovative and Transformative Solutions. We move forward with renewed energy and dedication to transform the science of engineering and its practical applications to solving the salient problems of our society.

The spacious infrastructure, well equipped laboratories, meritorious students and academically qualified and enthusiastic faculty being the salient features of the Institute. The Institute maintains good culture and discipline by having close association with each student through ‘**Students Mentoring Scheme**’.

Short term Goal - 1

To be recognized as the leading science and engineering-based centre of Excellence institute focused on addressing technology-based societal problems and providing its solutions.

1.1 Objectives:

1. To initiate the process of surveying in order to identify some critical issue of society.
2. To categorize the technological issues related to the society.
3. To provide technological solutions for various issues.
4. To work on emerging technology focusing on rural development.
5. To work as enablers for entrepreneurship.

1.2 Strategies / Actions:

1. To depute faculties as well as students in order to identify social and rural issues.
2. To identify the perspective area in order to deal with the issues.
3. Provide proper technological solutions related to identified problem.
4. To make sure all of the implementers are working towards the same end result and deal with things that take time away from creating.
5. Up gradation of laboratory with advanced technology required as per the need of society.

Short term Goal - 2

To provide a friendly, cheerful, intellectually rich and stimulating work environment for our students, faculty and staff.

2.1 Objectives:

1. To conduct co-curricular and extracurricular activities on regular basis in every department
2. To organize brain storming sessions for students for their overall development.
3. To implement teacher guardian scheme for regular counseling.
4. To organize Training and Placement activities on regular basis.

2.2 Strategies / Actions:

1. To prepare an academic calendar for institute as well as each department for conducting co-curricular and extracurricular activities.
2. In order to conduct brain storming sessions department can organize various activities such as technical Quizzes, Aptitude Test, problem solving contest etc.
3. To properly interact with every student in order to solve his each and every problem.
4. Increasing the number of activities to be conducted under professional societies and clubs.

Short term Goal - 3

- **Build upon our legacy of student-centred learning to prepare the inter-disciplinary leaders of tomorrow.**

3.1 Objectives:

1. To implement student centric teaching and learning process.
2. To provide some interdisciplinary knowledge to students.
3. Motivate faculties and students to register on online courses.
4. To develop leadership qualities among students in order to achieve top positions in corporate world.

3.2 Strategies / Actions:

1. To encourage students to participate in series of tasks including speaking, listening, writing and collaborating with other students.
2. To provide some interdisciplinary courses in every department to bridge the technological gap.
3. Departments are required to take initiatives in order to register faculties and students for online courses such as SWAYAM-NPTEL/MOOC etc.
4. Students should be encouraged to take initiative in multitasking assignments.
5. To organize value added course/include industry-oriented courses for students.

Short term Goal - 4

- To encourage high level of professional involvement, including publications in refereed professional journals, working on research-oriented industry collaborated innovative projects and patent filling with respect to establishing startups.

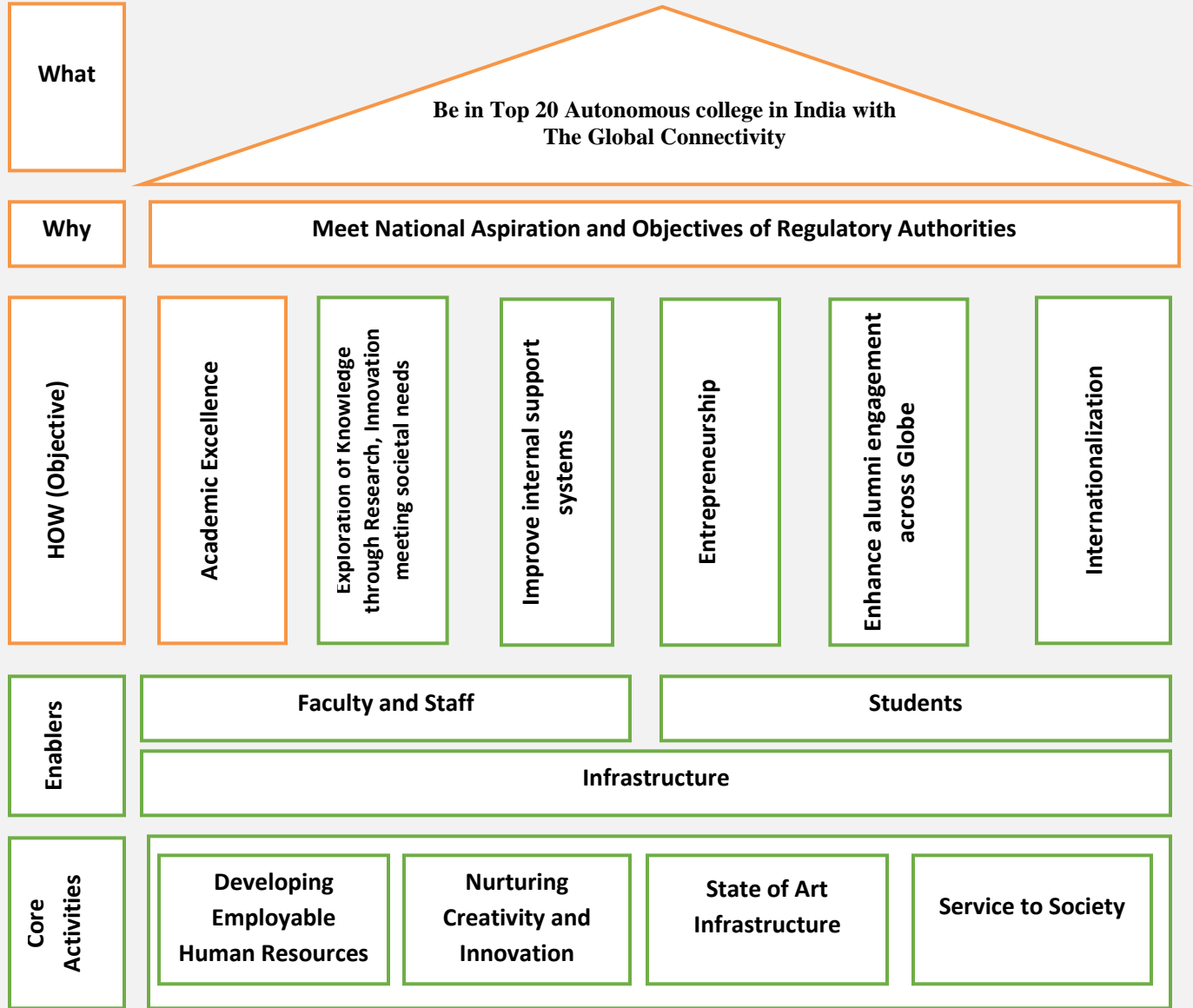
4.1 Objectives:

1. To encourage faculties to publish research papers in reputed journals and conferences.
2. To accelerate faculties and students to work in collaboration with industries.
3. To motivate faculty members to file patent and work on innovative projects and startups along with students.

4.2 Strategies / Actions:

1. It is expected to prepare a list of peer reviewed journals in order to publish research papers.
2. To give recognition to faculties in terms of either certificate or monetary advantage for publication in reputed journals.
3. Sponsoring faculties and students to participate in conference/workshops/STTP/FDP.
4. Various industries, sector wise should be identified to establish MoU for collaborating project work.
5. It is expected to establish research centre and centre of excellence in order to work on innovative projects and startups.
6. To strengthen IPR related activities.

QUALITY FRAMEWORK DIAGRAM



Goal 1: Academic Excellence

Values-based Education creates a strong learning environment that enhances academic achievement and develops students' social and relationship skills that last throughout their lives. The positive outcomes are achieved through teaching-learning methods blended with ethical values and cross domain research in cutting edge technologies. This leads to the all-round personality development of the students. It also provides social capacity to students, equipping them with social and relationship skills, intelligence and attitude to succeed at every aspect of their lives. A high quality of academic excellence can provide value-added experience for the students.

Strategies:

1. Industry friendly Curriculum design and revision (multidisciplinary education)

Curricula of all the programmes developed and adopted at our institute which covers multiple facets like providing engineering knowledge, desirable attributes, professional ethics and relevant technical and non-technical skills. Along with these skills it also encapsulates societal aspirations. To promote higher order thinking through analyzing, evaluating concepts, processes, procedures and principles in education, the course outcomes are designed in line with the revised Bloom's Taxonomy. The courses are developed to meet the stated PEOs, POs and PSOs of the program. The Choice Based Credit System adopted in the institute has given scope to the students to learn cross domain subjects/ technologies and take up inter-disciplinary project work. The curriculum is redesigned to incorporate the industry needs and the socio dimensional subjects that would enhance the student self-learning and employability skills.

The salient features of Curriculum.

Induction program has been made a part of this Curriculum and considered as Zero Semester.

- Five professional elective courses are offered with 3 credits each.
- Three open elective courses are offered with 3 credits each.
- One/Two courses are offered as project-based courses.
- Introduced integrated courses and industry related courses in all disciplines.

- Offered MOOCs courses as mandatory courses in the curriculum with two credits.
- Universal Human Values-1 is included with zero credits in zero semester and Universal Human Values-2 with three credit course are offered.
- Logic building and basic coding principles, programming for corporate, problems solving enhancement and linguistic competency building are offered as four single credit courses to enhance the Industrial skills of students.
- Introduced Socially Relevant Project in the curriculum with one credit.
- Mini project is included in the curriculum with two credits.
- Industrial training/Practical training/Internship with two credits offered in the curriculum
- Sports and Games / Cultural and NSS /Fine Arts / Yoga are offered as non credit mandatory courses
- Constitution of India and Environmental studies as Mandatory Non-credit course is introduced.
- Virtual lab experiments are included in some of the labs in all disciplines
- Courses related to Emerging areas are included in the curriculum.
- Courses with 20 credits are proposed to facilitate the award of Honours degree /Minor degree to the students.

2. Pedagogy and Delivery Modes

The day to day classroom delivery is through modern pedagogy evenly balancing the traditional methodology. The classrooms are equipped with the required infrastructure to facilitate the new modes of delivery. The faculty are trained on the ICT methodologies and continuous apprise of the same is provided through conduct and participation in faculty development programmes, workshops and seminars. An exclusive teaching/ learning centre is in place to support faculty teaching, student learning and communication. E- learning / online learning will be encouraged in addition to the traditional class room teaching-learning practice. Faculties and students are encouraged for MOOC- SWAYAM-NPTEL Certification.

Metrics / Measures

Key Result Areas	Measures
Curriculum Enrichment	Industrial Certificate Courses
	Courses focusing on Skill development and Employability
	Value Added Courses
Learner Centric Curriculum delivery	Academic Plan as per OBE & Academic calendar
	Quality projects
	ICT utilization / Pedagogy Tools
	Online Self learning Resources
	Industry exposure through Internships
	Workshops/FDPs on Pedagogy/Technology
	Learning Management System
Smart Classrooms	Multimedia and support equipment
	E-Learning Facilities.
Laboratories	Periodic maintenance and up gradation
	Virtual Laboratory
	Additional Design and open ended experiments

Goal 2: Exploration of Knowledge through Innovation meeting societal needs

The Institute addresses and enhances students' imagination, initiative and practical skills and equips them to innovate and confidently cross the threshold of challenges. Added to the academic activity additional open-ended experiments, Micro/ Mini Projects, Industrial based projects, Product based projects are encouraged. The innovative idea of students are transformed into reality by:

- **Project Based Learning from micro to macro levels involving processes and products.**
- **Enhancing collaborative projects with academic institutes, industry.**

Metrics / Measures

Key Result Areas	Measures
Research Publications	Numbers of papers published in reputed National and international journals
	Numbers of papers presented in reputed National and international conferences
	Faculty as reviewers for reputed journals
Frontiers of knowledge	Operational Centres of Excellence
	Conferences/seminars/workshops conducted.
	MOUs with higher learning institutes in India & broad.
Patents and copyrights	IPR Workshops
	Number of Indian Patents
	Books and Monograms, Copy rights

Goal 3: Improve internal support systems

The Institute has installed a modern and comprehensive Enterprise Resource Planning (ERP) system after streamlining all processes with the aim of improving efficiency and transparency of operations. The number of technical staffs in the departments will be increased, including senior staff with higher qualifications. The Institute will provide additional administrative staff to departments to manage routine work such as, arranging admissions and examinations, maintenance, recording minutes of meetings, as well as specialized activities such as publishing newsletters, maintaining website and engaging with industry and alumni.

The Institute will enhance the purchase section to provide greater support for facilitating purchases in a timely manner. A conference/FDP/STTP course support cell will be set up to help arrange conferences/ FDPs/STTPs. The Institute will provide adequate staff and online systems to enable maintenance of the estate and buildings at a higher standard.

Action points

- Simplify systems and processes with a modern ERP system.
- Appoint and empower departmental managers to support and co-ordinate purchase, maintenance and administration in the Department.
- Conduct annual satisfaction survey.
- Service orientation and training for staff, service response and online complaint systems.
- Establish improved faculty orientation and mentorship programme for new faculty members.
- Create a conference organizing support cell as a part of CEP.

Metrics/Targets

- Reduction in average processing times
- Continuous improvement on satisfaction survey scores
- Tracking and reduction in complaint redressal times

Goal 4: Entrepreneurship

The Institute aims to create an ecosystem for deeper collaboration with industry in several modes, including consultancy, sponsored research projects, technology transfer and continuing education. Measures are taken to transform classroom learning to a project based experience. The idea to innovate is encouraged through the **Technical Fest** and the best idea is rewarded. Infrastructure is provided to implant the ideas. Young technocrats get opportunities to exploit their full potential by setting up their own ventures thus becoming "job generators" rather than "job seekers". Strategy to provide a platform to business Start-ups to develop the innovative ideas into commercially viable products.

Training and mentoring to the students is given through **Entrepreneurship Development Cell** to realize the idea into application/ product at institute. Initial awareness on entrepreneurship is facilitated by conducting awareness camps, guest lectures, seminars, workshops, and skill development programmes.

The **Industry Institute Interaction** Cell proactively builds partnerships with industry in areas of strengths of the Institute. Collaboration with the industry is built through well-structured student internships and appointment of industry professionals as Visiting Faculty. A significant quantum of research will originate from problems identified as a result of the faculty's engagement with industry.

Metrics / Measures

Key Result Areas	Measures
Industry Collaboration	Industry Supported Labs
	Student Internships
	Knowledge exchange through seminars and workshops
	Faculty as Corporate Trainer
	Consultancy and Testing to industry
	Sponsored and funded collaborative research
	MOUs with Premier industries
Innovation and Entrepreneurship	Exclusive incubation facility
	Proactive participation of Students and Faculty
	Focus on Product development
Resources & Infrastructure	Exclusive facility for R&D
	Licensed Technologies

Goal 5: Alumni Engagement across the Globe

Alumni have been key stakeholders in the Institute's evolution and growth. Alumni achievements have been a source of pride for the Institute and have contributed significantly in society. Plan for active alumni chapters in various cities in India and several initiatives from the alumni to support some of the Institute goals. Donations from the alumni will result in creation of new infrastructure (convention centre, innovation centre) and support towards student facilities and counseling. The Faculty Alumni Network will help the Institute in identifying and attracting young researchers and academics to faculty positions at the Institute. The Institute has Distinguished Alumnus. The Institute conducts several events to engage with alumni within India and around the world. A dedicated committee manages alumni interactions, supported by a new entity. The Institute will make efforts to enhance the engagement with all alumni. The focus will be on a two-way interaction.

The Institute is committed to lifelong involvement with all students who will continue to be part of TGPCET family even after they graduate. The Institute will build its engagement on adding value and support to the alumni in their careers and professions with specialized training, lectures, access to the latest research and help with networking. The Institute will welcome alumni visits to the hostels and departments and will provide opportunities for alumni to interface with students and faculty and participate in the research and educational activities at the Institute.

Action points

- Create an Alumni Centre at the Institute to support alumni visits, activities and engagement.
- Initiatives for supporting alumni needs for continued learning and career improvement. Lifelong Learning Modules targeted for Alumni.
- Multiple interaction modes such as, interaction between alumni and students, mentoring, interaction between alumni and faculty, alumni inputs for curriculum development, alumni support for student placements and internships, alumni involvement in Department Advisory Committees and in enhancing the innovation ecosystem at DIET.
- Engage alumni as adjunct faculty.

Metrics/Targets

- Number of alumni visitors to Alumni Centre and the Institute: 300 per year
- Number of meets/networking events for alumni: 2 per year

Goal 6: Internationalization

Globalization weighs heavily in the post-modern society based on knowledge. The wider economic, social and cultural globalization theories emphasize that the current setting for education, teaching and learning is globalized. The scenario of higher education internationally is dynamic and changing exponentially. The international academic institutions are welcoming Indian students with the doors wide open, pressing Indian institutions for drawing a concrete strategic plan to survive with good student enrolment. It also offers an opportunity to institutions for collaborative programmes benefiting both partners involved. The international education system appreciates Indians and thus, the Indian institutes may attract good professors of foreign and Indian origin.

Technical higher education is increasing global enterprise; hence Indian institutions should embrace internationalisation that could provide them with new opportunities. The country's rationale for internationalisation would be to enhance its soft power, improve standards of domestic provision, and produce graduates with international competencies and skills. This can best be achieved by having more innovative partnerships. Given the historical advantage in higher education (particularly among emerging market economies) the widespread use of English language and low-cost living, India can potentially become a global hub for higher education. We need to provide greater autonomy to our Centres of Excellence to enter into a collaborative partnership with the best universities abroad.

Action points

- MOUs with Foreign Universities to give the faculty and students international exposure to augment the knowledge base.
- Academicians of Foreign Universities as Mentor
- Research Centre in process
- Double degrees with obligatory abroad period
- MIT- MOOC Courses
- Centre of Excellence in collaboration with foreign laboratories to enhance research activity.
- Certificate courses.