



MANAV RACHNA INTERNATIONAL INSTITUTE OF RESEARCH AND STUDIES

(Deemed to be University under Section 3 of the UGC Act, 1956)

MRIIRS Aravali Campus: Sector-43, Delhi Surajkund Road, Faridabad, Phone: +91-129-4198100 (30 lines)

Institutional Best Practices

Best Practice-I

Title of the Practice: Germination of Research and Entrepreneurial Inclination in Students.

Objectives of the Practice

The conventional objective of students in present higher education ecosystem is to attain job after graduation for good and promising career. This leads to an inbuilt tendency to stymie the spirit of inquisitiveness, research and entrepreneurship. With introduction of lucrative Flagship National Programmes, there is a need for venturing into start-up culture for 'Aatmanirbhar' Bharat. With a strong belief that this holds key for India's future and the future of our graduates, MRIIRS has launched the initiative for enabling out-of-the-box thinking and spur research culture and entrepreneurial yearnings for cascading win-win situations.

The Context

1. Many new vistas of entrepreneurship have now opened up and their wide-reaching sweep is limited only by one's imagination.
2. Today a large number of enterprises are ventured out by people in their young age across the globe. Some of the apps and thriving industries have been started by youngsters even in schools. So, a new trend has emerged where there is no threshold age for entrepreneurship.

3. This practice has spread right across students of all streams and disciplines. In today's world there is a cross-domain movement in the engagement of research and entrepreneurship. Area of research and entrepreneurship is not specified to any one discipline or domain. So students are guided to pursue their innate ideas without let or hindrance. This thus, requires courage and an unconventional approach to venture out on a path of research and entrepreneurship which is out of place with commonplace thinking.

The Practice

MRIIRS has research, innovation and entrepreneurship as bedrock of its knowledge dissemination, training and mentoring. Research, Innovation and Entrepreneurial facilities have been setup to facilitate our students to venture on to the path of innovation and entrepreneurship.

To this end:

1. MRIIRS has Research & Innovation Clusters (RICs), Research Incubator(RI), Business Incubator(BI), Intellectual Property Rights(IPR) Cell and Centres of Excellence (CEs) in collaboration with Industry leaders:
 - Mitsubishi Electric Centre
 - Automotive & Research Centre (Honda Motors)
 - Advanced Water Technology & Management Centre
 - INTEL
 - Solar PV Skills
 - Sports Science Centre
 - Electric One Mobility
- Through RICs, ubiquitous culture has been ushered into encourage and spur students to engage in research and innovation in their formative years. There are eight such clusters. The inchoate ideas of students towards research and

innovation are transformed into tangible shape in the RICs in terms of research papers or prototype development.

- Seven Centres of Excellence which have been set up in collaboration with industry leaders to enable students to get hands-on experience on contemporary industry practices, hone up their skills towards innovation and enterprise.
- Through Research Incubator, Business Incubator, Intellectual Property Rights (IPR) Cell; students receive an all-important exposure, mentoring and guidance to get into the area of research, Paper Publications, Patents Filing, Conceptualizing and Designing Start-ups.
- These endeavors pave the way for inculcating tangible skill-sets spanning over the transformation of conceptual ideas into viable products and incubation of start-ups. These activities have a strong motivational and burgeoning influence on a large section of student community to come out of their shell and strive towards research and innovation.

2. MRIIRS has been granted financial support of Rs. 2.87 Cr from DST-NESTEDB, Govt. of India for setting up Manav Rachna New Generation Innovation and Entrepreneurship Development Centre (MR NewGEN-IEDC) in the campus to nurture student- entrepreneurial ventures. The Centre works in an area of 5000 sq.ft. and is equipped with all the required infrastructural and technological facilities. Each start-up that is initiated in this Centre receives a funding of Rs. 2.5 Lakhs for the development work along with recurring grant. The practices adhered to have an incisive positive effect on the pedagogy also. While assimilating knowledge in the RI and BI, a student whilst engaged in his or her entrepreneurial pursuits is at once able to correlate his or her hands-on experience with classroom teaching. This is experiential learning in the truest sense and also promotes teamwork and participative learning.

Evidence of Success

Efforts expended in the course of this practice through well-defined Research Clusters have culminated in the form of 369 research publications by the students in the peer-reviewed journals. 47+ start-ups are being incubated or have been incubated out of which 12 start-ups under NewGen IEDC-DST sponsored projects are in progress. More than 76 Students/Alumni have started their ventures out of which 23 ventures are running successfully. Some notable operational start-ups, are mentioned below:

1. Techno Planet Lab Private Limited
2. Hyfn Games Private Limited
3. TrichoAgronica Private Limited
4. Parimukh Innovations Private Limited
5. Aarkaya Solar Solutions Private Limited
6. Tackyon Motor Sports Private Limited
7. Nature's Drop
8. Campus Dock
9. Vagabond Brains
10. GeAr (Smart Watch)
11. ThapKrida
12. TFT Innovation
13. Med Life Care
14. Night Labs (Hel-tech)

The above efforts have culminated in a thriving ecosystem of research, innovation and enterprise which transcends way beyond the customary classroom teaching. This exposure and results obtained there upon are very encouraging. Students who are in an impressionable stage of life at the University are very sharply amenable to peer-group activities; hence the culture of innovation and enterprise has spread wide afar in the University.

Problems Encountered and Resources Required

1. A change of mindset from normal classroom teaching and routine academic life to one of the assiduous and unrelenting pertinacity and efforts is the first and foremost requisite. However, necessary motivational inputs from faculty are helping on this count.
2. Students have to reschedule their timetable to trade-off between their classroom commitments, examinations and engagement towards their entrepreneurial endeavors.
3. There is a need for extensive outreach efforts and financial resources for drawing expertise from the industry to help students gain input about the latest market practices and technological requirements.
4. A host of support systems like physical infrastructure including labs and digital resources along with human infrastructure are needed which involve substantial financial outlay.

Best Practice-II

Title of the Practice: Fostering the culture of Environmental Sustainability across the campus and in nearby areas.

Objectives of the Practice

1. In consonance with the vision of the University to nurture its students into responsible citizens of the nation and the world; sensitize students to the most debilitating challenge of environmental degradation and risk to ecology.
2. To facilitate experiential learning for students in respect of social and technological aspects of environmental sustainability. This shall pave the way for inculcating core values like contributing to national development and fostering global competencies.
3. To facilitate a clean and green campus with a salubrious environment to students and assist them in the pursuit of academics.

The Context

1. There is a growing need for sustainability across the globe. Global warming, forest fires, frequent cyclones and ravaging floods in recent times are an ominous warning of environmental degradation and its consequences. This is the most critical issue of gigantic dimensions facing the mankind. Raising consciousness and desire to do their bit in facing the environmental challenges of the world is the essence of designing and implementing this practice.
2. Economic development both at micro and macro level is most crucial for mankind but on the other hand it leads to environmental degradation through air pollution, global warming, destruction of natural environment because of vehicular emissions, carbon footprint, energy use, food production and other reasons. As the entire world tries to find bigger solutions, the simpler ones in

maintaining ecology lie in use of technology connected EVs, renewable sources of energy, efficient waste management and water conservation.

The Practice

1. The Institution has defined, established, and implemented the Environmental Policy and Green Policy as per International Standards
2. Limiting power consumption - Solar power complements the total power supply in the campus to meet the power requirements while LED devices and sensor-controlled electric appliances are notable features to ensure an efficient power consumption system and use of renewable energy sources
3. Saving water –For ensuring minimal wastage of water,
 1. Recycled water is used for horticultural activities
 2. Rainwater harvesting facilities are in place
 3. Automatically closing taps are installed
4. Waste Management – Efficient waste management is the need of the hour for our country. Waste management practices are adhered to for a clean and safe environment, and for leading the way for students. In this regard,
 1. A Sewage Treatment Plant of 200 KLD capacity, a Bio-composter with a composting capacity of 75 Kg per day, and a Biogas Plant have been installed in the campus
 2. The Institution has undertaken MoU's/Agreements with various waste management companies such as
 1. M/S Ecogreen Energy for solid waste management
 2. Golden Eagle Waste Management Company for managing Biomedical waste
 3. BRP Infotech Pvt. Ltd, Delhi, for managing E-waste
 4. Mahavira Udyog, Rohtak for management of used oil from generators.

5. Green audit and energy audit by nationally and internationally approved bodies are regular features for mid-course correction, wherever needed
6. Cleanliness –
 1. MRIIRS has a lush green campus with its verdant surroundings spread over 79056.64 sqm. with hundreds of plants and trees. Butterfly garden in the premises of the campus enhances the beautification towards the nature and cleanliness. A round-the-clock exercise is sustained to maintain a clean campus- be it a classroom, laboratory, hostel, sports field, canteen, or any other common utilities
 2. The University has been following the **Swachh Bharat Abhiyan** to the hilt. Students have been actively involved in the much- acclaimed refurbishing cleanliness drives for the Faridabad Railway Station and Sanjay Colony in the Faridabad District. Apart from sensitizing students towards the much-needed cleanliness culture, such activities impart hands-on training in participative efforts, teamwork, experiential learning, contributing to the national development and other core values.
7. Afforestation –
 1. It is a well-embedded practice in MRIIRS to plant numerous trees on any occasion of significance like Independence Day, Republic Day, Founder's Day, Teachers' Day, etc. Leading by example, the University has encouraged many a student to do their share in planting and nurturing trees.
 2. The University has conducted several plantation-drives in Faridabad district covering various villages, an effort which has been appreciated time and again.
8. Appreciation of nature's beauty – Horticulture accorded high priority in MRIIRS. The University has a strong team of horticulture specialists who ensure that the campus continues to blossom throughout the year. All this not only lends an aesthetic appeal but arouses in our students a strong love and bonding for the Mother Nature.

9. MRIIRS has set up an Advanced Water Technology & Management Centre of Excellence. This Centre has been engaged with Faridabad Administration for revival of Badhkal Lake in Faridabad.
10. Awareness programs – The University partakes in several environment conservation initiatives including but not limited to conferences, competitions, plantation drives, sapling gifting, student campaigns, radio campaigns through community radio of the university i.e., RMR 107.80 FM, distribution of paper bags to curb use of plastic, etc.

Evidence of Success

1. The institution holds coveted recognitions of ISO 14001:2015 (Environmental Management System); ISO 50000: 2011 (Energy Management)
2. MRIIRS has very frequently been the recipient of awards by the regulatory and other civic bodies viz. the District Green Champion in 2021 by the Department of Higher Education, the One Student One Tree Award in 2019 by AICTE and many others.
3. The Village Sarpanches have showed their appreciation about the many plantation drives undertaken by the University.
4. An aesthetically appealing campus with widespread spick and span environment which is sustained throughout the year.
5. The Advanced Water Technology & Management Centre of Excellence has been allocated Wash Innovative Lab supported by USAID involving a funding of Rs. 20 lakhs to undertake various activities pertaining to water. The centre is currently engaged in Atal Bhujal Yojna-AtalJal as district implementation partner for three districts in Haryana and State Implementation Support Agency (SISA) in Jal Jivan Mission with Government of Haryana and has an Air Quality Monitoring Lab supported by DST, GoI.

Problems Encountered and Resources Required

1. Intensive efforts towards environmental sustainability and resources needed are highly capital intensive and time consuming. They can only be carried out by financial grants and support from the Government bodies and local administration. A change of mindset is imperative in the Government agencies to realize the importance of environmental sustainability and the perils resulting from risk of ecology.
2. Since any endeavor towards environmental sustainability entails working in the field for tangible result, it is taxing on students and faculty to take out time from their rigorous academic schedule.

The Government and non-Government bodies must be forthcoming with support grants to fortify our research activities particularly in the area of Electric traction, reduction of carbon footprint, research in batteries for vehicles, waste to value, remediation, energy conservation and use of renewable sources of energy.