

**Thematic Session – III**  
**Role of HEIs in Promoting STEM & Enhancing GER through Vidya Shakti**

**Date:** 29<sup>th</sup> July, 2024

**Time:** 01.30 PM – 03.00 PM

**Venue:** Exhibition Hall (Upper), Manekshaw Centre, 10, Parade Road, Delhi Cantt, New Delhi.

The Department of Higher Education aims to increase STEM enrolment to meet the demands of technologically driven fields by implementing the Vidya Shakti Scheme. This initiative will establish 10,000 Rural Interaction Centres (RICs) over two years, targeting 500,000 students from 8th to 12th grade, with a focus on female students. The curriculum, developed by IIT Madras, includes practical exercises and simulation software. Local Higher Education Institutes (HEIs) will act as hubs, with students serving as mentors or "Shiksha Saarthis." The scheme will use CSCs, leveraging their successful educational outreach. IIT Madras will provide ongoing training and support to mentors.

The Resource Persons for the Session were:

1. Prof. V. Kamakoti, Director, IIT Madras (Moderator)
2. Shri P. Nagarajan, Managing Trustee, Open Mentor Trust (Panellist and Key Note Speaker)
3. Shri Himanshu Nagpal, Chief Development Officer, Varanasi (Panellist)
4. Shri Rajender Aekka, South India Secretary, EKAL Gramothan Foundation (Panellist)
5. Mrs. R Aruan, Lecturer, SEMAT Andhra Pradesh (Panellist)

At the outset, Shri Gaurav Singh, Director at the Ministry of Education, extended a warm welcome to the panellists and participants. Prof. V. Kamakoti, Director, IIT Madras commenced the discussion by presenting key statistics on enrolment trends in higher education institutions. The key discussion points and proposed way forward are as follows:

**Discussion Points**

1. It was highlighted that the NEP 2020 must address the needs of grassroots communities. While COVID-19 was a brief disruptor, it also paved the way for digital education. Vidya Shakti Scheme emerged as a product of these disruptions. Under the NEP 2020, the goal is to achieve a Gross Enrolment Ratio (GER) in higher education to over 50% by 2030.
2. The Vidya Shakti Scheme, implemented by IIT Madras, was discussed in length which has started in 5 villages in Tamil Nadu and has now expanded to 504 RICs across India and Sri Lanka.
3. The concerns related to the necessity of addressing the unavailability of consistent and best teachers in villages, weak fundamentals in languages, maths, and science among grades 5-12, and mass migration of teachers leading to zero access to tuition for rural kids were mentioned.
4. The success of the Digital Didi program in empowering rural women and creating jobs by training of 3,300 teachers in science and math simulations in Varanasi and Andhra

Pradesh and significant improvements in students' attention spans, retention capacity, and performance in weekly micro assessments were highlighted.

5. Action plan of centralized live online teaching for grades 5-12 in the students' mother tongue by the use of simulation software to demonstrate experiments and virtual labs to enhance learning for weekly micro assessments to track student progress and understanding and how it is being implemented was also discussed.
6. The potential of virtual reality sessions and STEM kits to engage students in practical learning was also highlighted.
7. To address the educational gaps at Vidya Shakti, it is crucial to assess the extent of these gaps comprehensively. Evaluating the current situation involves understanding both academic performance and socio-economic factors. Additionally, shifting parental perceptions through awareness and engagement can help break the cycle of poverty by improving educational outcomes.
8. Vidya Shakti's faculty development program for state college faculty in the software space being a significant initiative was mentioned. This program enhances the skills and knowledge of educators, which in turn increases the confidence of students in their local colleges.
9. The EKAL School initiatives were also discussed, focusing the single-teacher institutions in rural and tribal areas and the EKAL's on Wheel program, which converts buses into mobile computer labs to ensure rural students, including the drop-out children, receive computer literacy.
10. EKAL Scheme for Virtual Education and Employment Skills emphasize on the provision of generic maths and science teaching through virtual mode, manual software training for homemaker women, and promotion of employment skills to enable women to work online from their homes.
11. The discussion focused on integrating STEM education, adopting a holistic approach, and strengthening literacy and numeracy. Key points included technology integration, and experiential learning, support flexibility in curricula, continuous teacher development, and industry collaboration, while prioritizing equity, research, and accessible resources.

## **Way Forward**

1. Engage at the grassroots level by interacting with parents of higher education students to increase the Gross Enrolment Ratio (GER).
2. Collaborate with higher education institutes to significantly boost the GER and foster research and innovation across all higher education institutes.
3. Utilize initiatives like Vidya Shakti to enhance GER by expansion of the number of RICs to cover more villages and ensure every rural child has access to quality education.
4. Showcase, support and scale the Digital Didi program to empower more women and create additional employment opportunities in turn reducing the gender gap.

5. Integrating technology in education includes utilizing existing school and village infrastructure to effectively introduce and scale technology interventions. This involves collaborating with CSCs and VLEs to ensure successful implementation. Additionally, distributing STEM kits and conducting virtual reality sessions will make learning more interactive and engaging for students, enhancing their educational experience.
6. Using technology and AI to collect the data and create a database and improve GER through the Vidya Shakti scheme.
7. The Vidya Shakti scale-up model aims to expand to 10,000 villages, aspiring for Bharat to become a "Vishwa Guru" (world leader) in education.
8. Integrating STEM education with core disciplinary competencies, fostering innovation skills, and promoting teamwork can collectively enhance overall educational outcomes and significantly contribute to increasing the Gross Enrolment Ratio (GER).
9. To attract students, focus on joyful learning through engaging bridge courses, subject-specific repositories, and integration of arts and sports. Develop STEM labs and DIY kits, and connect curriculum to real-world issues. Build confidence with TLM resources, foster societal connections, and provide career guidance and entrepreneurship opportunities.
10. Encourage government to launch mission-mode schemes like Vidya Shakti to boost GER.

The session featured an open house discussion with the panellists, delegates from MoE, distinguished educationists, and field experts. It concluded with a vote of thanks delivered by Shri Gaurav Singh, Director, MoE.

### **Rapporteur**

1. Mr. Chandan Kumar Thakur, Deputy Advisor, NIEPA
2. Dr. Neetu Sharma, Assistant Professor, NIEPA