



IEEE AP-S COPE WORKSHOP

Organized by

IEEE MTT-S/AP-S/EMC-S Joint Chapter Hyderabad Section



Venue: Zilla Parishad School (ZPS) Rachloor Village
Ranga Reddy District, Telangana, India

Date: 23rd September, 2023

Report on IEEE AP-S COPE Workshop

*This Report presents details of the AP-S COPE Workshop conducted by IEEE MTT-S/AP-S/EMC-S Joint Chapter Hyderabad Section at Zilla Parishad High School, a state government-run school in Rachloor village of Ranga Reddy District of Telangana, India on 23rd September 2023 titled “Inspiring the Engineers of Tomorrow, Fostering the Next **Generation of Technology Innovators.**”*



INTRODUCTION:

The IEEE AP-S/MTT-S/EMC-S, Joint Chapter of Hyderabad Section, organized a “Workshop on STEM Education” for students at Zilla Parishad School (ZPS) Rachloor Village, a state government-run school in Rangareddy district, Telangana state, India.

The workshop was attended by around 85 students from classes 6th to 10th, and female children's participation was very encouraging. The workshop was conceptualized with the aim that graduate student volunteers who are pursuing their

careers in science and engineering come forward and interact with school children to make them aware of the importance of education in Science, Technology, Engineering, and Mathematics (STEM) for society and motivate young minds to understand the importance of STEM in their future growth.



The students who attended this workshop come from underserved communities and have neither exposure to science and technology nor access to this technology in their lives. This workshop aimed at developing these students' interest in STEM and providing them with guidance to choose these streams for their higher education so that they can be offered equal opportunities in society and, in turn, also contribute to the betterment of society.

This workshop was coordinated by the Executive Committee of IEEE AP-S/MTT-S/EMC-S Joint Chapter of Hyderabad Section, and student volunteers delivered talks from IEEE MTT-S SBC of Vardhaman College of Engineering, Hyderabad, India. The workshop was inaugurated by the Chair of IEEE AP-S/MTT-S/EMC-S Joint Chapter, Hyderabad section Dr. Prashant Kumar Mishra, Vice Chair Dr. Sulakshana Chilukuri, Joint Secretary Shri K. Sambasiv Rao and Head Master of ZPHS Rachloor Mr. Devendar Reddy. Dr. Prashant Kumar Mishra welcomed all the students and student volunteers participating in the workshop. He emphasized that the workshop will provide exposure to the students to the importance of science and technology and also inculcate interest in students to take these streams for their higher education.



WORKSHOP SESSION DETAILS:

Many interactive sessions were conducted as part of the workshop to keep the students engaged and help them comprehend the value of engineering.

IMPORTANCE OF ENGINEERING

The workshop started with a talk on “Importance of Engineering” by Avanthika Katari. She actively presented some real-life examples and depicted the importance of engineering. During her presentation, she demonstrated to the students the evolution of technology and life before cellular phones. She explained to the young children the role of engineering and technology in facilitating ease of life. The interactive session asked students about the changes they observed in their surroundings due to new technologies. She also made the students perform practical experiments, which helped them understand the hardships of life without engineering and technology.



ELECTRICITY AND MAGNETISM

The next talk was conducted on “Importance of Electricity and Magnetism” by Tarak Mohan Reddy. Under this session, the importance of electricity, various methods of generation of Electricity, Concepts of Magnetism and Electromagnetism, and their applications in our daily lives. He demonstrated the

concept of magnetic levitation through animations and the idea of building the fastest train in the world, Maglev, using a simple technique of electromagnetism. The students actively listened and enjoyed the presentation.



WOMEN EMPOWERMENT



The next session, conducted by Himabindu, was intended to motivate the girl students by showing them real-life examples of women engineers and social workers. Himabindu motivated female students by explaining the contributions of women scientists and making them believe that they are not less than their male

counterparts in society and can contribute in the fields of science, engineering, and technology.

After the three inspiring sessions, Harshavardhini conducted a recreational session, i.e., a Quiz on biopic movies made on eminent personalities, especially from the field of science and technology, like Shakuntala Devi, Nambi Narayanan, etc., for young students. The idea was to get them involved in the discussions and inspire them by explaining about these personalities. The prizes were distributed as part of the quiz.



IMPORTANCE OF MATHS

Kukkadapu Lakshman conducted the next session on the importance of mathematics in daily life. He explained to the students the importance of mathematics in daily life using real-life problems, such as the application of trigonometry in calculating the heights of buildings. He also explained the Vedic mathematics principles. The students were engaged in solving complex mathematics problems such as addition and multiplication using practical concepts of Vedic mathematics.



The mathematics quizzes were conducted with the active involvement of the students. The session made the students realize that complex mathematical concepts can be understood by developing an interest in the subject. The students enthusiastically learned the concepts and solved real-time problems using simple techniques explained to them.



EMINENT PERSONALITIES FROM A RURAL BACKGROUND

Nikhil Noel conducted the next session on the lives of eminent personalities from India who belonged to very humble backgrounds but reached greater heights due to their determination and wit.

Nikhil inspired the kids by illustrating the lives of notable individuals like Prof. Satish Dhawan, Dr. APJ Abdul Kalam, Sam

Pitroda, Priya Balasubramanian, and many more. He gave their life examples to demonstrate to the kids that coming from a rural background does not preclude them from becoming prominent figures in India and the rest of the world.



INDIAN SPACE PROGRAM

The next session was by Gajji Soumith, who discussed the Indian space program and ISRO's recently successful Chandrayan 3 mission. He explained the three Chandrayan missions conducted by ISRO and their importance.

He helped the students understand the details of satellites and the successes and failures of Chandrayan 1 and 2. He motivated them by quoting, "Failure is the stepping stone to success." He made the students understand space research and encouraged them to pursue engineering as a career and contribute as researchers in these areas in the future. He demonstrated the various stages of the Chandrayan 3 mission using video clips.

IMPORTANCE OF INNOVATION

“Creativity is thinking up new things, and innovation is doing new things”—this tagline depicts the importance of innovation.

Pramida presented this last session. She helped the students use their brains to think and innovate. Identifying an apt problem statement and creatively devising a solution must be inculcated in the students. She showed some simple yet very useful innovations that very young students can see in daily life.



She interacted with the students to get to know some beautiful ideas from them and to apply them in their real lives.

Before the event came to a close, one more thrilling **quiz** on the eminent scientists and their inventions/discoveries, which are helpful to us in shaping modern life, was conducted.



The children were enthusiastic and received several prizes for participating in the quiz.

After every workshop session, interactive quizzes were conducted, and prizes were distributed to students to stimulate their curiosity.

CONCLUDING SESSION:

IEEE MTT-S/AP-S/EMC-S Joint chapter Chair Dr. Prashant Kumar Mishra, Vice Chair Dr. Sulakshana Chilukuri, and Joint Secretary Sambasiv Rao donated science experiment kits to the school for their science lab and requested science teachers to develop a practical understanding of students through these experiments. The memento was presented to HM and all the science and mathematics teachers of the school as a token of appreciation for their effort in developing scientific temper in their students.

The workshop concluded by distributing books on “Important Scientists from India” to all students to motivate them through the life stories of these scientists.





CONCLUSION:

The IEEE AP-S COPE STEM Workshop organized by IEEE MTT-S/AP-S/EMC-S Joint chapter of the Hyderabad Section was an enriching experience for volunteers and Executive committee members. It gave an opportunity to the volunteers to enlighten young minds studying in rural areas and contribute towards encouraging them to participate in serving humanity through technology.