7.2.1 Best Practice - 1

Title of the Practice: Establishment of Institution's Innovation Council at Sree Dattha Institute of Engineering and Science (SDES)

The main objective and purpose of forming a network of Institution Innovation Council is to encourage, inspire and nurture young students to expose to innovative world thereby devising new strategies for the creation of new ideas and innovations. The institute through its strong academic curriculum, periodic assessments of students, projects, extra-curricular activities, etc., identifies the skills and talents of students especially, their innovative background. In order to provide a wider acknowledgement of the ideas and innovations created by the students, our institution constantly encourages and motivates to participate in more number of competitions and conferences.

Institution Innovation Council (IIC) which is framed with proper guidelines by Ministry of Human Resources Department (MHRD) is one such a platform to showcase students ideas. It is also one of the best method to conduct various programmes in the form of seminars, awareness programmes, events, competitions, etc., Having greater advantage in IIC, the institute needs to utilise the benefits for the student innovators. With such thought, Sree Dattha Institute of Engineering and Science initiated this process and established IIC in the institution.

To nurture the best minds among the students in idea generation and innovation, several activities are planned and conducted out in the institution. Some of the important activities are:

1. Thinking sessions, competitions, discussions with fellow students are arranged an informal meeting.
2. Regular meetings and information sharing with students from different departments having unique and different ideologies in solving an issue.
3. Allotment of mentors and sharing the complications in ideas.
4. Further, shared ideas are moulded with institute experts with additional inputs. It will enhance the idea or the innovation. Such meetings with experts will be conducted periodically.
5. Organising periodic workshops/seminars/interactions with entrepreneurs, investors, professionals for acceleration and incubation opportunities.
6. Identifying the best and sociological, socio-economic innovations are rewarded and success stories are shared with a wider public for motivation.
7. Organizing hackathons, idea competition, mini challenges, problem solving and design thinking, field visits to various places etc., engaging the industry partners to provide solutions for industry related issues.

The institute believes in motivating students by creating opportunities in understanding the real life problems and issues both in academia and industry. Site specific sessions and tours, field visits will also be arranged for the those student innovators for ideation related to issues.

Our institution also believes in strong mentoring for which those mentors are also rigorously trained and updated in their own expert areas. This in turn, the knowledge can be shared by the mentors to students in an efficient way. Mentors having diverse backgrounds i.e., interdisciplinary are also invited from other institutes for sharing the information related to idea creation, innovation and entrepreneurship.

Systematic approach and the activities conducted:

With so much of thought, keeping in mind the benefits of the innovative minds in the institute, the following activities are carried out:

- Successfully conducted more than 6 activities in the academic year 2020 - 2021 and more than 10 activities in the academic year 2019 - 2020.
- The activities conducted helps many students in problem identification in their selected research works and in their projects. Conduction of their research works based on the identification of problems was so beneficial due to those sessions and activities mentioned above.
- Motivation from resource persons to encourage the students to apply and mould themselves into future entrepreneurs.

Best Practice - 2

Title of the Practice: To create awareness on Computer based systems and Basic Engineering Concepts related to Electrical, Electronics, Civil, Mechanical Engineering among students of Government Schools of Sheriguda village (2020 - 2021)

It is with great thought and responsibility that the institution has initiated this awareness series for the benefit of rural youth studying in nearby Government schools. Since significant number of students are studying in rural areas, we thought it would be a great idea to create a curiosity among those students to learn. The aim of this awareness series is to introduce computers which is of limited availability in their premises and also provide an insight about the background of basic engineering concepts related to different disciplines such as Electrical, Electronics, Civil and Mechanical Engineering.

Systematic approach and the activities conducted:

Sheriguda village is a small locality having a "Zilla Parishad Government High School". with limited resources in terms of technology and computers. The volunteers including staff and student members

of Sree Dattha Institute of Engineering and Science picked the students from the grades of 6, 7, 8 and 9 to introduce, teach and train the basics of computers which in turn improves the rate of Computer Literacy. Students of the Computer Science and Engineering department conducted classes for theory and practical work by understanding the school students' need and ability of learning.

The awareness programme was organised for 6 days from 2nd December 2021 to and 8th December 2021. A total of 160 students attend the programme and benefitted. Training was given on basic concepts of computers along with an overview of computers, generations of computers, physical components of computers, MS Office (Excel), Internet and mail writing. Students were also taken to Smart Classrooms, Computer Labs for the operation themselves. Volunteer students and faculty members supported the students for doubt clarification. In order to know the effectiveness of the program, conducted assessment tests were conducted and students who got 1st, 2nd and 3rd are awarded.

The volunteer students and faculty members have also identified the language issues encountered by the Government school students and immediately responded for the need and necessity to teach the language especially during computer science applications. By doing so, the students got more interest in the process of learning through the awareness programme.

In addition to the above, basic concepts and related experiments like basic electrical components in Electrical, construction models in Civil, welding and cutting works in Mechanical are discussed and taught to the students. Students are also taken to the respective engineering labs for showing all the equipments which we use in our laboratories and an outline of each of the equipments and their advantages are discussed with the students for better understanding.

The institute believes creating such an awareness program will motivate the growing young children to understand the purpose of engineering in our daily life. Also, it will allow them to participate in engineering related activities. Overall the awareness programmes help students to be computer literate with an ambition to take up any discipline of engineering. The Principal of the school appreciated the Computer Awareness Programme and Basic Engineering Programme and gave us a letter of appreciation that is attested below.

The institute understands the efficiency of such awareness programmes which will have greater impact on the society and the rural youth. This will be a continuous process and will conduct regular programmes and events in the future too.

Best Practice - 3

Title of the practice: To develop the projects towards Society empowerment through Research & Development (R&D) cell.

The Institution with its responsibility towards society does extension activities which increases the college community interaction. This process facilitates the institute to understand the society related problems. Also, the R&D cell of the institute promotes research and innovation in technologies for society development.

Systematic approach and the activities conducted:

Our institution has started Dr. APJ Abdul Kalam research corridor with all branch students. The major objective is to explore the new innovative ideas from students. Students utilize the facilities of R&D centers to develop their academic projects as well as their innovative ideas.

Extension activities such as developing research corridors and rooms is an important dimension in the institute education process. The solutions derived from such extension activities transform the lives of society and needy. These activities will involve the best and latest technologies and the applications.

Social projects such as "Automatic Plant Irrigation based on Soil Moisture and Monitoring over IOT", "Greenhouse Monitoring and Weather Reporting over IOT (Rain, Atmospheric Temperature and humidity)", "Monitoring and Controlling Agriculture Field Environment", "Smart Assistance for Blind People", "Prediction of Rice Leaf Diseases in Agriculture", "Developing Solar Panels for Producing Sensor Energy", "Robotics using Arduino Nano", Mobile Making", etc., are some of them executed successfully by students.

The projects completed by the students brings holistic development improving the status of the society and bring out the leadership qualities and team spirit among the students. These projects maintain an equilibrium between academia and real-life situations.