

Best Practice – 1

1. Title of the best practice

Developing scientific temper among faculty and students by encouraging conduct of research by various initiatives.

2. Objective

- i. Today effective teaching as well as research is important for the student to respond to the challenges in global scenario.
- ii. It is necessary that the teaching must be application oriented and thereby expertise in research is to be achieved to make the teaching interesting and useful to the students.
- iii. Knowledge in emerging technologies for solving problems that arise in the changing industrial scenario i.e onset of 4.0.
- iv. Fostering interdisciplinary research with collaboration of different branches of engineering and science faculty.
- v. Publication of papers and participation in various competitions which enable the students to hone their ideas and innovations.

3. The Context

- i. SNSIT believes that professional mindset, competency in academics and interest in research are required in the faculty for success of technical education system in India.
- ii. The faculty must have interest in learning new emerging technology areas and study the trends of industry so that the curriculum can be devised accordingly. There is need for collaboration between industries and institutions.
- iii. There must be formation of research groups which continuously engage in identifying and discussing new technology areas so that they can propose revision of curriculum as well as the teaching methodology which are suitable in the changing scenario.
- iv. The research groups of teachers and students should be formed for conduct of research which will be useful for industry.



- v. The industry must come forward to support the academia for the common good. Joint research programs are to be taken up which is the need of the hour.

4. The Practice

- An ecosystem is set up in association with the Research groups of various departments to foster the spirit of creativity and research. The Institution provides funding for any infrastructure requirements for conduct of research.
- The college maintains hardware library in each of the departments and the components required are drawn or procured from the market for developing desired product for realizing their Proof of Concept.
- A College Research Committee has been constituted to evolve research policies and to disseminate Code of Ethics and Professional Conduct to bring credibility and community trust.
- Seed money for Internal research to do experimentation in the research work is provided by the college based on the recommendations of a research panel comprising Dean of Research and Development, HoD concerned and the Coordinators of the department for research. With the allocated research fund, any equipment or software/hardware can be procured as per rules in force. Thus, a platform is established to promote research activity in the faculty and students and enable them to submit applications for research grant by funding agencies.
- 96 faculty members are pursuing PhD and are given special leaves as well as financial assistance in purchasing some equipment and software for conduct of research and reimbursement of expenses towards

presentation of papers in conferences and also for publications in recognized journals.

- College is continuously trying to get into MoUs with reputed Institutions which can collaborate in conduct of joint research.

The institute has been making strategic alliances with reputed R & D organizations such as DRDO units i.e Research Center Imarat, Center for advanced Systems, Defense Research and Development organization. Besides this, the alliance and consultancy activity is in progress with Ministry of Micro, Small and Medium Enterprises (MSME), The Indus Entrepreneurs (TIE) Grad, T-hub, HAL, Neucleonix Systems, PJTS Agricultural University, Hyderabad and Central University, Hyderabad, Central Institute of Tool Design, Balanagar, Wadhvani Foundation USA, etc.

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- The college has formed Department level research groups for counseling and providing guidance for proper adoption of research methodology for junior faculty, PG students and quick learners of UG program.
- Research based performance is evaluated and is taking into consideration for giving best teacher award for teachers. At present a weightage of 10 % is given which is proposed to be increased to 30% in the assessment process. The teachers are also given awards for publication in indexed journals.
- Equip faculty on emerging technologies by organizing and supporting participation in FDPs and Workshops.

5. Evidence of Success

- Sponsored projects worth Rs 2.01 Crore were awarded to SNIST faculty from various organizations of DRDO such as RCI, CAS, DRDL. Projects

are also received from AICTE, UGC, DBT, MHRD and TEQIP- III. Some projects are received from Private Undertakings namely Neucleonix Systems, NextGenIT, Smartbridge, Apollo Computing, etc. The offer letters given by the above organizations are available in our college Website <http://sreenidhi.edu.in/pagecontents.php?catid=7&scatid=399>

- 1350 papers were published by our faculty and students in indexed journals, out of which 750 papers are published jointly by the faculty and students. Research awards are given to all the contributors . *List of papers published and list of awards given are available in our college website <http://sreenidhi.edu.in/pagecontents.php?catid=7&scatid=8>*
- *161 books /Book Chapters/Proceedings of various conferences are contributed by our faculty in the last five years. <http://sreenidhi.edu.in/pagecontents.php?catid=7&scatid=8>*
- Under TEQIP – III for which JNTUH is a nodal agency, for funding of R & D projects, 11 projects has been awarded with a total grant of Rs 31.45 Lakhs. *The sanction letters issued by TEQIP – III & JNTUH, Hyderabad are available in our college website: <http://sreenidhi.edu.in/pagecontents.php?catid=7&scatid=399>*
- College is recognized as a Scientific and Industrial Research Organization by DSIR. *The letters be uploaded to our Website <http://sreenidhi.edu.in/pagecontents.php?catid=7&scatid=60>*
- JNTUH has recognized our college as a Research Center. *The letters issued by JNTUH, Hyderabad are available in our college Website: <http://sreenidhi.edu.in/pagecontents.php?catid=7&scatid=60>*

6. Problems encountered and Resources required

- **Maintaining balance between research and academic activity for the faculty**

i. The college has been making efforts to give remission in the work load to the faculty who are engaged in Research and Consultancy. This is being taken care of by concerned Heads of the depts.

ii. **Formation of Research Groups to work in the disruptive technologies and inter disciplinary areas**

The new areas mentioned above are of recent origin and AICTE has advised all the Engineering colleges to start integrating the same in the curriculum. The research groups are identified for initiating research in all the new disruptive technologies and also in inter disciplinary areas.

All the faculty are empowered to understand, assimilate the new technologies, so that they can teach the students and also initiate research by deputing them to attend FDPs and Seminars and Conferences conducted in these areas. Any help required in this regard for purchase of software will be met by the college.

7. Notes (Optional)

In the present day situation the responsibility of a teacher is not only to teach the subject but also to give the applications along with current research using the concepts of the subject.

The teacher himself must study the various aspects of the applications and the type of research work being carried out which is relevant to the subject. In this regard there is a need for changing the curriculum as and when the industry requirements are known so that the graduates will be employable in the industry. There should be a study group in this regard with faculty from various departments so that advance action can be taken to integrate various developments in different subject areas for eventually revising the syllabus.

Best practice - 2

1. Title of the practice

Initiatives taken by the Institution for student Development in all aspects including shaping as Entrepreneurs

2. Objectives of the practice :

The college aims to produce intellectually strong, emotionally stable, socially responsible and spiritually enlightened graduates to ensure wholesome education for balanced development of the student. The college owns responsibility of making the student employable.

- a. To Design a curriculum to meet with faster technological developments which promotes student centric learning and also to enhance their employability.
- b. To ensure effective teaching learning process.
- c. To make the students work in groups to improve their emotional quotient.
- d. To inculcate ethical values and societal awareness through various student clubs.
- e. To arrange lectures on spiritual values.



3. The Context

- a. Industry at present is affected by the onset of destructive technologies. They are forced to change their strategies and accordingly adjust to the changing scenarios in the market.

Accordingly, the curriculum has to be revised to give opportunities to learn on their own to become lifelong learners and to be employable.

- b. Due to technological developments, new methods of effective teaching have evolved which are to be used by the faculty for more effective teaching learning process.
- c. Curriculum must be devised such that the students are to work in teams for achieving a desired goal. This naturally ensures understanding of team and leadership skills.
- d. It has become essential to introduce subjects in the curriculum in ethics, values and gender sensitization so that the industry can run effectively.
- e. Exposure to the lectures given by spiritually enlightened teachers is necessary to develop proper attitudes in the students.

4. The Practice :

- a. ***Curriculum revisions due to technological changes and to develop team skills in students.***

With the onset of new technologies, it is necessary to revise the syllabus at least once in a year so that the students can keep pace with the changing industrial scenario. Faculty members are empowered to teach the new subjects effectively.

The curriculum gives a number of opportunities to learn on their own so that they can develop into lifelong learners. With these initiatives they become more employable.

- b. ***New methods of teaching learning process***

Audio visual aids are being used extensively so that the student can see what is being taught and listen to the explanations and hence the

perception of the subject matter improves. The students are made to take the notes so that the retention in the mind improves tenfold.

In our college, all classrooms are converted to e-classrooms by providing internet and campus wide networking. With these all the learning materials from NPTEL, MIT open courseware, Video lessons prepared by our faculty in our studios are made available.

c. *Imbibing team skills and development of positive attitude*

The curriculum as stated above has a number of subjects where the students are to work in teams to complete various tasks given to them.

This develops team skills in the students for achieving a goal set for the team and in the process the team skills as well as positive attitude are imbibed in them. With these improvements in the curriculum we make the students more employable.

d. *Imbibing ethical values and societal responsibilities*

Subject on Ethics and Values is introduced in our curriculum for guiding the students on right path in our Autonomous mode.

There are number of clubs which are engaged in social service activities in Government Primary Schools, Orphanages and Old age homes for helping them in all possible ways. Thus, students are realizing their responsibilities towards the society.

e. *Arranging of lectures on spiritual values*

Some adolescent students joining in higher education system are getting diverted due to western and other influences. Unfortunately the parents of such children do not understand this situation and only wakeup when their wards are either detained or failed in the exams. The students must be exposed to lectures on Indian Culture and Values. College is taking the help of spiritually enlightened personalities to guide students to be on the right path.

5. *Evidence of Success*

- Due to improved teaching learning process, the results of students in various examinations have improved.
- With the encouragement of the college our students participated in various National and International competitions and they came back with accolades and awards.



- By forming a number of technical associations and clubs and encouraging the students to do research, we could make them publish 750 papers in journals which are indexed by UGC, Scopus, WoS etc in the last five years.
- In the last three years 16 innovative ideas were submitted to Indian Patent office and out of them 2 are registered, 10 patents are published and 4 patents are in different stages of scrutiny by IPO. The funds that are required to be paid to Patent Attorney, filing the patent application and publication & examination fee are provided by the college.
- Due to various efforts made including the revision of the curriculum for introducing the courses such as Logical reasoning, quantitative aptitude, Communication skills in writing , as well as oral communications and soft skills the employability has improved and hence the percentage of students placed has also increased. The average pay offered to the students has also increased.

6. Problems Encountered and Resources required

The Need for exposure of students to the Industry and opportunities utilized by the college in this regard

1. Institution arranged opportunities to the students to have exposure to the relevant industry by arranging internships at the end of II and III year. The students have opportunities to do final year project in the industry in the entire second semester of final year. Thus, the students are exposed to industrial environment on three occasions in their four year degree program.
2. The college established an incubation centre with facilities provided for ten budding entrepreneurs. They can engage in the development of a product or a service. Our students have won many medals in India and abroad in the innovation competitions.
3. The Institute is providing seed money to support students to realize the product. Their applications are sent to MSME for financial assistance for accelerating the development into an enterprise.



7. Notes (Optional)

- i. Institution believes that faculty is the heart of the institution. Due to their initiatives highest percentage of students have passed in University examinations.
- ii. The college teachers have taken initiatives to conduct faculty development programs for the benefit of faculty of our college and sister colleges.
- iii. Due to the initiative of teachers all the courses run in our college were accredited by NBA at a very young age 5 ½ years.
- iv. At the age of seven years, the college was chosen by World Bank under TEQIP I and later in TEQIP - II.
- v. The college is recognized as a Research Center by JNTUH and DSIR, Govt. of India.
- vi. The college encourages the faculty and students to do research and publish papers as detailed in the item – 5 above.

We believe that, these best practices of Sreenidhi can pave way for other institutions to follow us and adopt the same for their growth.