

# **Role of IQAC in Achieving Quality Engineering Education: A Polytechnic Case Study**

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## **ABSTRACT**

The Engineering Education sector in India has changed a lot with reference to quality and quantity during last twenty years after globalization. Looking to the competition in the era of globalization, the said education sector as one of the service sector, bringing in quality in it is of prime importance. As a part of Engineering Education the polytechnic institutes play a vital role in producing Diploma holders (skill centric) who act as an important critical link between various departments in industry. Hence it has crucial role to play in the development of industry leading further development of society & country.

This paper consists of four parts. The first part describes the meaning of quality in general and quality engineering education in particular. Part two states objectives of any Internal Quality Assurance Cell (IQAC). The third part discusses as a case study the activities carried out such as innovations carried out in curriculum development, faculty development, use of ICT in Teaching – Learning Process, Industry Institute Interaction, strategic planning etc at our polytechnic institute. The last part includes the concluding remarks.

**Keywords:** Quality, Globalization, Polytechnic

## **1. INTRODUCTION**

India has accepted the policy of linearization in 1991 i.e. opening the economy to the world and faced global competition during last twenty years. Rapid technological advances and innovations are also the reason of global competition. This has made lots of changes and challenges in India with reference to quality in various sectors including education. It will grow more in future if India (Member Nation – WTO) agrees on General Agreement on Trade in Service (GATS - WTO), which includes education as tradable commodity. It will further intensify the competition including Education sector and demands quality and creativity in services. Hence the survival depends on the adoption of changes and consistency in performance.

## **2. QUALITY AND QUALITY IN EDUCATION**

“Quality is fitness for use.” – **Joseph Juran**

“Quality is conformance to requirements or specifications.” – **Philip Crosby**

This implies that quality has been defined differently in different contexts. In today’s scenario, quality is defined as customer satisfaction and delighting the customer. With reference to quality in engineering education means prime focus on to ensure students achieve their goals and thereby satisfy the need of society and nation. Hence Management Commitment, Faculty Members, Research, Consultancy & Publications, Innovation in Curriculum & Teaching – Learning Process, Infrastructures, Student’s Achievements, Industry Institute Interaction, Co – Curricular & Extra Curricular Activities, etc. are considered as indicators of Quality in Engineering Education.

### **3. INTERNAL QUALITY ASSURANCE CELL (IQAC)**

The basic purposes of Internal Quality Assurance Cell at Institute level are:

- To ensure continuous improvement in the entire operations of the institution.
- To assure stakeholders connected with higher education namely, students, parents, teachers, staff, would be employers, funding agencies and society in general of the accountability of the institution for its own quality and probity.

Functions of the Internal Quality Assurance Cell at Institute level:

- Significant and meaningful contribution in post accreditation phase.
- Act as a change agent in the Institution for stimulating culture of continuous improvement.
- Development and application of quality benchmarks / parameters for the various Academic and administrative activities of the Institution.
- Organisation of workshops and seminars on quality – related themes and promotion of quality circles and institution.
- Wide dissemination of the proceedings of such activities.
- Recording and monitoring quality measures of the institution.
- To develop annual plan and to compile annual quality assurance report.
- To consider related matters as suggested by Director, ADR Cell (IQACU–Coordinator).

## **4. A CASE STUDY**

Institute of Diploma Studies has established the Internal Quality Assurance Cell (IQAC) in the Year – 2009 with an objective to have continual improvement in various activities carried out at Institute in the benefits of various stake holders. Since inception of IQAC, it has played pivotal role in various activities to ensure Quality at every stage like Strategic Planning, Curriculum Development, Faculty Development, Research, Consultancy & Publication, Use of ICT in Teaching – Learning Process, Students Centric Activities, and Continuing Education. The approach and implementation in different activities through IQAC at Institute is presented as a case study.

### ***4.1 Strategic Planning:***

Strategic Planning is required for development of any Institution / Organization and used as a tool for improvement. The different departments have framed the short term and long term goal in line with vision and mission of institutes through SWOT analysis. Every department have prepared five year planning and corresponding execution plan to achieve the goals.

### ***4.2 Curriculum Development:***

Due to rapid changes in last two decades in the filed of technology, any Engineering Institutes has to change / update the curricula as per the fast changing demand of industry. The curriculum development at institute is done through systematic process collecting inputs form various stakeholders through IQAC. The Board of Studies at different department is headed by industrial person as a chairman including industrial people on board as members along with faculty members.

The Alumni's and Recruiter's feed back on different aspects of academics is also included in the curriculum development process.

#### ***4.3 Faculty Development:***

The key element Engineering Institute as Service Organization is the Human Resources and Faculty members in particular. Through the efforts of IQAC, Split Post Graduate Programs has been started at university and approximately 25% faculty members has been deputed for the same with out disturbing the routine academic activities at institute. With an objective to learn innovative concepts in respective field, the management promotes and motivate faculty members to participate in programs like Refresher / Induction Programs, Seminars, Workshops, Conferences, etc by sponsoring the all expense.

The faculty members are motivated to attend In – Plant Industrial Training at different Industry in the key identified area of their interest so that it is incorporated in teaching the courses.

The Faculty members of Institute are awarded with ISTE Best Polytechnic Teacher Award in Gujarat State for the Year 2005, 2007, 2008, 2009 & 2011 shows the recognition of Faculty members.

#### ***4.4 Research & Publication:***

IQAC has put special emphasis on research activities by conducting workshop and training programs on Research Methodology for faculty members and motivated to refer research paper form journals in their identified area. Due to which faculty members started reviewing the papers

and planned to carry out minor research project. In spite the Diploma Institute, the university promotes such activities by providing financial assistance up to Rs. One lakh per project. Three minor research projects have been sanctioned by university with assistance and research projects worth more than Rs. One lakh are applied to various funding agency like DST, GUCOST etc. Hence Faculty members have published their research papers in International Journals, National Journals and presented papers at various conferences, seminars, workshop etc.

#### ***4.5 ICT in Teaching – Learning Process:***

ICT is adopted by the all departments at institute for Teaching – Learning Process and also for other academic and administrative activities. The Institute is fully equipped with various resources like Video Projector, Visualizer, OHP, Audio – Video Rooms, Seminar Hall & Auditorium. The library of institute includes Digital Resource Center as special facility for faculty members and students giving access to Online Journals, NEPTL Videos, CDs, DVDs, Program videos and other resources. The online exams are designed and conducted through use of software like Moodle.

#### ***4.6 Student Centric Activities:***

The **Four Value Added Courses** and **Three Audit Courses** are introduced for students to learn the inter – disciplinary courses over and above the normal courses learnt by the students.

The Institute Industry Interaction cell provides constant support and guidance to the students for the preparation to appear in campus interviews. Hence the aspiring students securing the placement during their final year students.

The National level TechFEST Celebration, Project & Model Competition, Paper & Poster Presentation Competition, Quiz Competition, workshop, Industrial visits & tours etc are organized as routine activities at institute for student's overall development.

#### ***4.7 Continuing Education:***

The Institute has conducted various activities as a part of Continuing Education like Short Term Training Program (STTP), Seminars, Conferences etc.. with an objective to learn latest / innovation in technology in respective discipline. Recently Institute has successfully conducted four STTPs simultaneously in different discipline involving latest technology. This needs special mention as such programs that too not simultaneously conducted at Polytechnic Institute.

### **5. Conclusion**

Engineering Education plays a significant role to lead nation towards developed countries. In the era of globalisation, one needs to be globally competitive, be innovative and adopt the changes for survival. Therefore authors strongly feel "Quality is the only option for the survival in the era of globalization". In this respect, IQAC at Institute plays a vital role and establishment of the same is found to enhance the various areas of improvement pertaining to engineering education.