

## ACCREDITATION OF TEACHERS IN ENGINEERING INSTITUTIONS

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### Abstract

*Quality of education imparted by engineering colleges in India has become the subject of much concern to experts in engineering education. The quality of the teaching process is determined mainly by the teachers. Hence it is essential to train teachers in order to ensure good quality of education. Towards this end, the ING-PAED program has been presented. The action to be taken in India for instituting good technical teacher training program has been suggested.*

### Introduction

With the proliferation of private unaided engineering colleges during the 1980's and 1990's, there has certainly been a significant expansion of technical education in India. However the mushrooming of private engineering colleges, especially those colleges started and run by politicians, has brought in the question of quality of education imparted in these colleges. This question is exercising the minds of experts in technical education. AICTE, the Apex body set up by Govt. of India to look after technical education in India, set up NBA (National Board of Accreditation) in order to carry out quality assessment of engineering colleges and to grant accreditation to deserving colleges. An important criterion in quality assessment is the so-called Teaching and Learning Process. Here NBA prescribes technical qualifications of

teachers in engineering colleges. However the fact, that only technical qualifications are not sufficient to ensure quality teaching, seems to have been overlooked. This paper addresses this issue and suggests accreditation of teachers as a means of ensuring high quality of teaching in engineering colleges.

### Accreditation of teachers in engineering colleges : a historical perspective

It is a common practice in nursery, primary and secondary education system to prescribe a degree or diploma in education as an essential qualification for teachers in schools. However, it is strange that, in tertiary education system (i.e. university and technical education system), only academic qualification is prescribed; no qualification in education

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(Bachelor's or Master's or Ph.D. degree in education) is prescribed. It is taken for granted that academic qualification only is sufficient to ensure good teaching at university or technical education level.

This leads to following situation, often encountered in engineering colleges. A fresh I class graduate is selected as a Lecturer in an engineering college immediately after declaration of university examination results. He/she is assigned to teach a course within a month or two of selection. The poor novice has no idea of what teaching is about and how good teaching is done. As a result the teaching done by him/her is of poor quality. The students suffer, and fail in university examination in large numbers. The fresh teacher is blamed for the poor results. The teacher hardly gets any guidance from senior teachers on how to teach well. The teacher soon gets frustrated, and either leaves the college for greener pastures outside the college or becomes thick-skinned.

This phenomenon, which is quite common in India, was occurring in engineering colleges in Europe also. In an attempt to tackle this problem, IGIP (International society for engineering education), a professional society of engineering educators, evolved the following program.

### **ING - PAED (accredited engineering educator) program of IGIP**

IGIP is an International Society for Engineering Education based in Switzerland in Europe. It was started in 1972. Over the years it has acquired international status with members in more than 75 countries in the world. It

first started this ING-PAED program in 1986. It was first adopted by engineering institutions in EU countries. However, it has now spread its wings to cover the former Soviet union countries, as well as countries in South America, Middle East, and South Est Asia.

ING-PAED IGIP program is of 200 hours duration and is based on three pillars:

1. Engineering qualification (such as Master's or Ph.D. Degree in engineering)
2. Engineering education qualification
3. Practical work in engineering education.

**Engineering Qualification:** The participants admitted to this program satisfy the basic academic qualification, viz. a master's or Ph.D. degree in the relevant engineering discipline.

**Engineering Education Qualification :** is based on the premise that a good knowledge of pedagogy essential for ensuring high quality of teaching. This part is made up of the following courses:

1. Psychology (16 lessons)
2. Sociology (8 lessons)
3. Communication studies (44 lessons)
4. Text creation (16 lessons)
5. Development and Education (8 lessons)
6. Laboratory didactics (12 lessons)
7. Pedagogy with reference to

engineering education (12 lessons)

**Practical work in Engineering Education** : forms an organic part of teacher training. The participants are expected to design and deliver a mini course of at least 16 lessons under the guidance of a senior accredited teacher. The lectures delivered are videotaped, and discussed by the group. This discussion along with sharing of experience goes a long way in making the participant proficient in the art and science of teaching.

**Implementation of the program** : The participants are required to undergo the above training program in a technical institution duly accredited by IGIP. After successful completion of this program, the participant is granted the title, Accredited Engineering Educator, and his/her name is entered into the register of accredited technical teachers. For this purpose, IGIP has evolved an administrative structure consisting of

- a. IGIP-IMC: International Management Committee, the Apex Body
- b. IGIP-NMC: National Management Committee.

### **The situation in India**

In India, there is hardly any systematic faculty development program meant to groom good technical teachers. The Quality Improvement Program (QIP) of Govt. of India is meant for improvement of academic qualifications of teachers working in engineering colleges, and not for giving them training in how to do effective teaching.

Of late, Govt. of India seems to have

realized the need for grooming good technical teachers. It has therefore started Induction programs for fresh teachers working in engineering colleges. It consists of hardly two week program conducted by NITTR's (National Institutes for Technical Teacher Training and Research). Such a short program can at best do only lip service to the problem of turning out technical teachers with a sound knowledge of both theory and practice pedagogy as applied to engineering education.

### **Suggestion for future action**

With a view to ensuring high quality of engineering education, it is essential to adopt a training regime comprising pedagogy of engineering education and practical work in engineering education. There are three way of going about this task :

1. To adopt the ING-PAED OGIP program by constituting NMC (National Management Committee) of IGIP for India, developing accredited engineering colleges in India for training technical teachers for ING-PAED programs. In fact, NITTR's, running Induction Programs for technical teachers, could act as accredited training centers.
2. To upgrade the Induction program run by NITTR's so as to conform to ING-PAED standards by extending both the duration and content of induction program offered.
3. to start one-year Master's degree program in Engineering Education in some reputed engineering colleges, and to

insist that teachers working in engineering colleges acquire this qualification within three years of joining the college. Confirmation and eligibility to UGC scales of pay may be made subject to getting such engineering education qualification.

### Conclusion

The issue of training technical teachers to do a good job of teaching as a means of ensuring good quality of education in our engineering colleges has been discussed. International situation in this area, viz. the ING-PAED program of IGIP, has been presented. The situation in India is discussed and future action has been suggested.

The author is inclined to adopt the first alternative suggested above. This has the merit that teachers accredited in India will be of world class. They may then be expected to raise our engineering college to world level.

### References

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