QUALITY AND ACCREDITATION

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ABSTRACT

The article briefly explains the Engineering Education Scenario in India highlighting the conditions peculiar to the country, the mechanism of quality appraisals, accreditation, the present status, mutual recognition between various countries, the steps that need to be taken to maintain the credibility of the accreditation system and building competence level through quality vision.

In recent years there has been rapid and phenomenal expansion in the technical education system in India in terms of number of institutions, student intake, and the introduction of new programmes in emerging and frontier areas. It is a matter for concern that the Quantitative growth is at the expense of Quality due to lack of requisite infrastructural facilities and human resources. Inability of the system to cope with the necessary changes in curriculum to match the latest and new developments in technology is further contributing to mediocrity. There is increasing awareness among the stake holders and society in general of the need for urgent and adequate steps to arrest this trend for ensuring quality education.

Today, in India there are nearly 600 engineering/technology colleges with an approximate intake of about 1,50,000, over 1500 diploma level institutions with an intake of nearly 2,00,000 and about 700 institutes of management and many colleges of Architecture, Pharmacy, Catering and Hotel Management. Every year the system is expanding at an alarming rate. Mushroom growth of the institutions in the private sector, smacks of attempts to commercialise and this needs to be curbed.

It is a misconception that quality education is expensive and an exclusive prerogative of the elite. On the contrary, it is hardwork, commitment and dedication on the part of all concerned in an organisation that brings in quality.

Several features peculiar to this sub-continent act as impediments for the achievement of Total Quality Education (TQE) in a short period. Quality has to be built into the system slowly and steadily. We cannot expect a quantum jump from "Mediocrity" to excellence. Even in case of good institutions with adequate physical facilities sustained maintenance of quality is not an easy task.

Quality assurance mechanisms require an integrated approach of all the facets of institutional activities. Systems approach therefore, assumes relevance. Although quality depends to a great extent on the effectiveness of the teaching-learning process, this alone does not constitute the Total Quality Education (TQE) which implies the fulfillment of mission, goals and

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objectives of the institution, faculty strengths, input-output levels of students, physical infrastructure, interactions with employing agencies, evaluation processes, extension activities, feedback mechanisms, the curricula etc. Even if an institution possesses great strength in some aspects, abnormal weaknesses in certain other aspects can prove to be a hinderance for achieving TQE. Establishment of "Quality Circles" for the programmes offered by institutions can be of great help for fulfilling the goal of TQE.

Students seeking technical education and professionals do not confine themselves to the National boundaries. Quite a few of them migrate to other countries for availing better opportunities. The quality in education should be viewed, therefore, not merely from National perspective but as a global concept. Ultimately it should be aimed at making the quality of the programmes earn international recognition and should be able to satisfy the learners needs and attract students.

Quality assurance requires quality audit. The quality audit reports, besides serving as appraisals to accredit the institutions, facilitate improvements in the quality by identifying the strengths and weaknesses. Such a system therefore calls for transparency in the process, competence of the experts to assess and the institutional honesty as well as assessors honesty.

Participation of user organisations in the evaluation process is essential. Appraisals are to be periodical and based on specific guidelines, norms, bench marks and criteria.

Accreditation helps in improvement of the quality of the programme and renders 'quality assurance' to the stake holders. It is an object-oriented process to **assess, assure** and **augment** the quality. The accreditation process should **acquire** credibility if it is to earn **appreciation** and **acceptance** locally and globally. Accreditation is a dynamic process and should be vibrant, transparent and flexible. It is not just an evaluation process for probing only deficiencies. It aims at bringing in excellence in imparting knowledge for high productivity and professional performance in practice. While formulating the accreditation guidelines there is a need to ensure that the programmes provide judicious mix of related and relevant topics which impart the capability to tackle open-ended problems with adequate practice in carrying out designs and communicating effectively.

In the industrial sector, customer satisfaction depends on the criteria of the quality of the product. The inputs to an industry are the raw materials, the quality of which can be insisted upon the maintained always at a desirable level. In the education sector in India, maintaining uniform quality of intake is rendered impossible due to the following :

i) there is a wide spectrum of institutions comprising institutions of national importance whose competence is comparable with the best in the world, Regional level institutions, Central and State Universities, Deemed to be Universities, Autonomous Colleges and Affiliated Colleges (Government, Government Aided and Private);

ii) engineering institutions in private sector have a management quota for NRI's with admission requirements not as stringent as prescribed for regular stream;

iii) reservations for SC & ST is a

constitutional obligation besides other categories of reservation which vary from State to State.

Another peculiarity of the education system in India, as it exists today, is the affiliating system according to which the university imposes rigid curriculum on the affiliated colleges (other than Autonomous colleges) with practically no flexibility. This acts as a major impediment to the introduction of innovations which in turn adversely affect the Quality. In terms of student strength the affiliated colleges account for about 90%.

The absence of interaction between the institutions and the industry results in lack of practical bias for the students. This is a major drawback in professional education.
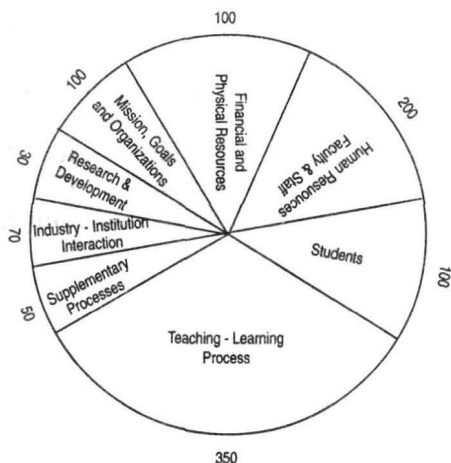
In India, although there are several professional societies concerned with technical education, only a few of them have charter. They do not have a confederation of professional societies. To add to this, certain professional bodies are endowed with statutory powers for licensing and monitoring Technical Education in some disciplines.

Under these circumstances, for introducing the process of accreditation, the policies and procedures are to be evolved carefully keeping in view the various aspects mentioned above. Self assessment by the institution must be insisted upon for arriving at corrective measures. Care has to be taken, even for bench-marking, to involve institutions of different types and wide spectrum of persons from academic, industry and other organizations connected with technical education. As a next step, several training programmes have to be conducted for evaluators. These had been the important tasks of the National Board of Accreditation (established in 1994) in the initial stages. The National Board of Accreditation (NBA) identified eight major criteria for accreditation through assessment by the visiting peer groups.

The weightages for these vary depending on their relevance. Higher weightages are assigned for those which are found to be of great importance. Each major criteria is sub-divided into various segments. The weightages for the eight major criteria for undergraduate and postgraduate programmes in Engineering and Technology are based on a 1000 point scale as shown in fig. 1

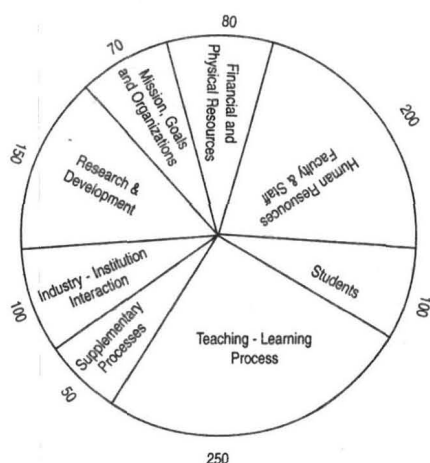WEIGHTAGES FOR UNDERGRADUATE PROGRAMS   WEIGHTAGES FOR POSTGRADUATE PROGRAMS

Fig. 1

The process of accreditation conceived by NBA involves sixteen steps as given in Table :1

Table :1	ACCREDITATION PROCESS
Step 1 Submission of information (by institution) - Self study	**LAST STAGE FOR WITHDRAWAL**
2 Scrutiny of information (by NBA) secretariat	9 Discussion among team members
3 Selection of Visiting Team	10 Submission of team's report
4 Providing the team with information	11 Consideration of report by sectorial committee
5 Critical study of information by visiting team	12 Consideration of report of visiting committees together with observation of sectorial committees by NBA
6 Furnishing additional information (if necessary) to visiting team	13 Decision of NBA on the assignment of grade
7 Visit to the Institution	14 Reporting decision of NBA to AICTE
8 Discussion with Management & Academic staff-enumerating strengths & weaknesses	15 Issue of cerfiticates
	16 Entry into Directory.

The organisational framework adopted for the process of accreditation is a three-tier system to cover the entire realm of technical education. The three tier system is briefly explicated hereunder :

i) **Self Appraisal / Peer Appraisal :**

Self appraisal is to be made by the institution which by itself conducts the collective introspection, stock taking, rethinking and identification of corrective measures. This brings out involvement, understanding and enhances the concern of the institution.

The peer groups consist of experts in their respective fields who have distinguished themselves and made a mark in those fields and are well aware of the procedure through a thorough understanding of the manual for evaluation, having undergone training as evaluators. They are drawn from both the academic institutions and user organisations.

Self appraisal authenticated by the external peers would reveal the real strengths and weaknesses of the system and therefore, this process would constitute the first important step of any strategic planning for quality enhancement.

ii) **Sectorial Committee :**

The Sectorial Committees are constituted with experts drawn from various programmes covered under a major discipline. Experts from user

organisations, professional bodies, research institutions and educational institutions are members of this body. The primary task of this body is to examine the reports of the visiting committees and to make appropriate recommendations to NBA for confirming the grades recommended by the visiting committees based on the quality appraisals of various criteria and to furnish reasons in case any changes are recommended.

iii) National Board of Accreditation :

NBA is a national body consisting of high level professionals, drawn from education, industry, R & D, professional bodies, UGC, IIT Council besides a representative of MHRD. NBA is entrusted with responsibility of formulating policies, procedures and guidelines for accreditation. It is empowered to take a final decision with regard to the award of grade for each programme assessed, keeping in view the recommendations of the sectorial committees.

For the purpose of classification, NBA has decided upon the allocation of grades, 'A', 'B', 'C', and 'NA' determined by the score acquired on a 1000 point scale. The grades indicate the level of satisfying the criteria. The period of validity of accreditation and assigned grade is normally for 5 years and it can be even less depending on the level of weaknesses in meeting the requirement of criteria like teaching-learning process and faculty.

The accreditation process of NBA needs to be recognised by similar bodies in other countries. In this context one has to note that each country has defined its approach to educational quality assurance. For mutual recognition of accreditated programms in different

countries, there is a need for substantial equivalence. It is to be noted that substantial equivalence does not refer to the equivalence of the programme, but it refers to substantial equivalence with regard to the policies, criteria, procedures used by different countries to accredit the programmes in Engineering and Technology. In conformity with this concept the engineering accrediting bodies of countries - Australia, Canada, Ireland, New Zealand, United Kingdom and United States - have initiated steps for mutual recognition as early as in 1988. This led to the formulation of the 'Washington Accord' and subsequently South Africa and Hong Kong have also become signatories. The Signatories of this accord remain independant and autonomous. Each country is responsible in its own jurisdiction for determining the accrediting standards and evaluation procedures. In essence such an accord ensures an agreement that the education programmes accredited in a country are comparable to the accredited programmes in the other member countries. There are some bodies such as Federation of European Engineering Institutions (FEANI), North American Free Trade Agreement (NAFTA) and Asia Pacific Economic Conference (APEC) which play a similar role for their respective regions.

NBA has made considerable progress and it has well documented policies, procedures and criteria comparable to America and other countries except for the grading system. NBA has already made an impact in creating awareness among the institutions and highlighted the need for improving the quality of education utilising criteria and the guidelines evolved by it. The time is ripe for NBA to take immediate steps for becoming a signatory to the Washington

Accord.

While NBA expects that the institutions should continuously improve the quality through process of self assessment and accreditation, it should continue to review its own policies and procedures at regular intervals by self appraisals and feedback from within the country and from outside as well. Such a practice has been adopted by ABET which has been changing its procedures and criteria for assessment in tune with the changing trends. ABET has drawn up new criteria and procedures for 2000 A.D. which are very much similar to the criteria adopted by NBA. The Engineering Criteria 2000 of ABET are :

Criterion 1 - Students,

Criterion 2 - Programme Educational Objectives,

Criterion 3 - Programme Outcomes and Assessment,

Criterion 4 - Professional Component,

Criterion 5 - Faculty,

Criterion 6 - Facilities,

Criterion 7 - Institutional Support and Financial Resources and

Criterion 8 - Programme Criteria.

While the criteria drawn up for the purpose of accreditation and the procedures adopted by NBA appear to be valid and relevant at the present juncture, cautious and continuous review through discussions is called for. Sagacity, perspective planning and quality vision are required to maintain the credibility of the system whenever steps are initiated for evolving changes in policies, procedures, assessment criteria and relative weightages.

Quality, Quality Appraisal, Accreditation, Quality Assurance are inter-dependent. Techniques to improve the quality and to offer quality assurance needs quality vision for strategic planning of various steps to be taken such as establishment of quality circles at Institution/University levels and state level quality councils to assist NBA in its efforts for mutual recognitions at international levels.

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