# Quality Assurance in Higher Education

## *An Introduction*

National Assessment and Accreditation Council
Bangalore, India

Commonwealth of Learning
Vancouver, Canada

# Quality Assurance in Higher Education: An Introduction

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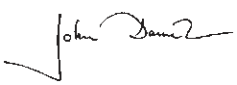
# FOREWORD

The Commonwealth of Learning (COL) is proud to be a partner with the National Assessment and Accreditation Council (NAAC) in bringing out the 'Quality Assurance in Higher Education: An Introduction', a volume which aims to address the needs of the generalist and the specialist; the policy maker as well as the practitioner. It also signals the expansion of NAAC's mandate from an organization which assesses and accredits institutions to one that would promote a culture of quality. It is here that the interests of COL and NAAC converge and we hope that this Module will move beyond India and will have relevance in other jurisdictions across the Commonwealth.

Let me begin with the obvious question: What is quality? I define quality simply as 'fitness for purpose at minimum cost to society'. Many countries are debating whether their tertiary education systems are indeed fit for use, in the sense of providing the education and training that students and society need. In developing countries, where resources are scarce, countries should not waste them on institutions that are not fulfilling important purposes. For India today, quality in higher education is a key priority. And this must be achieved keeping in mind the issues of relevance, costs, equity and international standards.

How do we promote a culture of quality within institutions of higher learning? What would be the elements of such a culture? How can different institutions handle such challenges? Do such institutions require a different kind of leadership? Do they need a more decentralized, dialogic and democratic style of management? How does one generate a sense of ownership among the staff so that they are motivated to align themselves to institutional goals and give their best? What resources and training are needed? How can monitoring and evaluation become part of all processes, systems and sub-systems of institutions? What makes an institution reflect on its practice and commit to a continuous quest for excellence? Can the use of new ICTs help? With the increasing convergence of face-to-face, ODL and eLearning systems, is there need for separate quality assurance mechanisms or are the same criteria applicable to all systems? Are quality assurance agencies exclusive clubs? What level of credibility have they established? Who will accredit the accreditors? What is the role of individuals in creating cultures of quality? What role can best practices play? Or do we move beyond reliance on best practices to what C. K. Prahalad calls next practices? As he says: "It is advisable to follow not just best practices, but to develop next practices to blaze a trail and stay ahead of the pack!"

Rapid expansion in the developing world will change the profile of global tertiary education. Distance learning will play a role in this expansion because it fulfils the basic quality criterion of being fit for purpose at minimum cost to society. Quality assurance systems will also have to meet this criterion. They can best do so by helping institutions evolve towards a culture of quality. This implies that the major challenge for quality assurance in the years ahead is capacity building at all levels. The publication of this Module is a step in the right direction.



Sir John Daniel
President and CEO, Commonwealth of Learning

# PREFACE

The idea of quality is not new, nor that of quality assurance (QA). Neither, for that matter, are our concerns on quality. Over the years, numerous books have been written by experienced quality professionals to provide an appreciation for those aspects of quality that are of practical relevance. But these are meant largely to meet the needs of personnel engaged in quality assurance. For those who are not 'professionals' in the field, but still desire to have a preliminary knowledge of the quality assurance processes and procedures, the need for a simple unified introduction to the subject exists. This book is written in an attempt to fill that void in the QA literature.

There are different approaches to quality assurance. The meaning of quality assurance may vary depending on the field of activity. Different countries have evolved QA models for their higher education systems as necessitated by their unique national contexts. Nevertheless, in all activities related to quality assurance across the world, there lies a common unifying thread that laces together the basic concepts. This book discusses the current QA vocabulary, the prominent models and different practices in use in quality assurance sector in general and higher education in particular.

The set of typical user profiles in the 'Module Overview' describes the targeted readership range. In chapters where the Indian context is specifically in focus, the arguments are so presented that they retain their validity without much loss of generality when extended to other instances as well. After explaining concepts of quality, a brief history of quality movement and the pioneering ideas of leading thinkers on quality as also their implications for higher education are described. Subsequent chapters deal with perspectives on quality, its assessment methodologies and tools for its assessment. To sustain the relevance to the international reader, a mix of generic models of QA globally in use and Indian models along with international QA practices are explained in chapters 7 and 8. Suggestive ways to build a culture of quality and a summarized account of QA in Open Distance Learning are included in chapter 9. The end-of-chapter 'reflective exercises' are included to help the reader to draw maximum benefit from the text. As the book is aimed at the 'general' reader, the essential technical matter is couched in general terms. For the very same reason, an appropriate glossary explaining technical terms is also included. Practical illustrations, where concepts may otherwise be obscure, are included. The web links and references cited at the end of the book should facilitate the interested reader to pursue the subject in greater detail.

From time to time, the National Assessment and Accreditation Council (NAAC) has been bringing out publications that provide insights into the Indian example in quality assurance. This book is an outcome of collaboration between NAAC and the Commonwealth of Learning (COL). This is the first in the series on quality assurance in higher education, being planned by NAAC in collaboration with COL, with the twin objectives of raising general quality awareness as well as developing quality assessment competencies. It is hoped that the readers will find the contents not only academically enriching, but also of practical value in their quality pursuits.

***Acknowledgements***

Dr. Sanjaya Mishra, the author, has spared no effort to keep the simplicity and versatility of the book high. I heartily congratulate him for this effort. It is our privilege to work in association with the COL in this venture. Our particular thanks go to Sir John Daniel, President and CEO, COL, Dr. Asha Kanwar, Vice-President, COL and Prof. Mohan Menon, Education Specialist, COL for their consistent guidance and help. I am grateful to Prof. Ram Takwale, former Chairperson, EC, NAAC, during whose term this venture was conceived and Prof. Goverdhan Mehta, Chairperson, EC, NAAC for his continued encouragement and support for all quality enhancing activities. It is practically impossible to acknowledge the help and guidance of everyone who assisted in the preparation of this book, but mention must be made of the distinguished academicians and my colleagues at NAAC, who made numerous suggestions for improvement of the book. Special thanks and appreciation are due to my colleagues, Dr. K. Rama, who played a commendable role in coordinating this work and Wahidul Hassan, for coordinating the publication aspects of the book, and Joshua David for editorial help.

**(V. S. Prasad)**
**Director, NAAC**

# ABBREVIATIONS

AB: Accreditation Board
ABET: Accreditation Board for Engineering and Technology
AICTE: All India Council for Technical Education
APQN: Asia Pacific Quality Network
AUQA: Australian Universities Quality Agency
CHEA: Council on Higher Education Accreditation
CMM: Capability Maturity Model
CMMI: Capability Maturity Model Integration
COA: Commission on Accreditation
COPA: Council on Post-secondary Accreditation
CORPA: Commission on Recognition of Post-Secondary Accreditation
DEC: Distance Education Council
DEI: Danish Education Institute
Dip.: Diploma
ENQA: European Association for Quality Assurance in Higher Education
ECPD: Engineer's Council for Professional Development
EQM: External Quality Monitoring
FRACHE: Federation of Regional Accrediting Commission of Higher Education
GOI: Government of India
HEI: Higher Education Institution
ICAR: Indian Council of Agricultural Research
IGNOU: Indira Gandhi National Open University
ICT: Information and Communication Technology
IHEP: Institute of Higher Education Policy
INQAAHE: International Network for Quality Assurance Agencies in Higher Education
IQAC: Internal Quality Assurance Cell
ISO: International Organization for Standardization
JUSE: Japanese Union of Scientists and Engineers
MCETYA: Ministerial Council on Education, Training and Youth Affairs
MoA: Memorandum of Understanding
NAAC: National Assessment and Accreditation Council
NBA: National Board of Accreditation
NET: National Eligibility Test
NIST: National Institute of Standards and Technology
ODE-AAB: Open and Distance Education Assessment and Accreditation Board
ODL: Open and Distance Learning
PDCA: Plan-Do-Check-Act
PDSA: Plan-Do-Study-Act
PG: Post Graduate
PoA: Programme of Action
QAA: Quality Assurance Agency
SPC: Statistical Process Control
TQM: Total Quality Management
UG: Under Graduate
UGC: University Grants Commission
UNESCO: United Nations Educational, Scientific and Cultural Organization
USDE: United States Department of Education

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# 0. Module Overview

The promotion of the idea of quality is one of the important activities within the overall mandate of the National Assessment and Accreditation Council (NAAC). As more and more Higher Education Institutions (HEIs) are coming forward for assessment and accreditation, there is a need for more trained personnel in quality assurance. In order to propagate the concept of quality assurance in higher education and prepare 'assessors' to take up the task of third party assessment and internal quality assurance, NAAC is in the process of developing a series of publications on quality in higher education. This module entitled "*Quality Assurance in Higher Education: An Introduction*" developed in collaboration with the Commonwealth of Learning, Vancouver, Canada is first in the series that aims at providing a basic understanding of quality in general and its application to higher education in particular. This module will clarify various terms, models and practices widely used in the context of quality assurance in higher education.

## 0.1 User Profiles

1. Ms. Anita Pradhan is a Lecturer in Botany in a Government College in the State of Maharashtra. She is UGC-NET qualified, and has been teaching for the last 2 years. Her college has decided to go for NAAC assessment, and as a teacher she also wants to understand the concept of quality as applied to education so that she can improve her teaching.

2. Dr. Tariq Ahmed Khan is the Principal of a semi-aided college in Orissa. The Chairman of the college management recently attended a seminar on quality, and having heard of NAAC, advised Dr. Khan to prepare a plan of action to apply for NAAC assessment. Dr. Khan intends to know more on the topic, so that he can lead the assessment from the front.

3. Dr. Shanti Iyer is a University Reader in Karnataka. She has recently been nominated as a member of the Internal Quality Assurance Cell (IQAC) of the University. Her role is to promote the concept of quality in higher education and also train other faculty and staff to assure quality. As a faculty of Management, she knows about quality concepts in the industry. But, she would like to know more about its application in higher education.

4. Prof. Christopher Thomas is Vice Chancellor of a State University in Utter Pradesh. He has been invited to Chair a session on quality assurance in education in a seminar organized by NAAC.

Though, he is aware of the activities of NAAC, his university is yet to be assessed. He would like to understand more about quality assurance in higher education, before going to the seminar, and he is also thinking of considering applying for NAAC assessment.

5. Mr. Ramesh Nath is Registrar of a Deemed to be University. The Vice Chancellor has entrusted him to prepare a note on quality assurance for submission to the Executive Council of the University, before going ahead with NAAC assessment. Mr. Nath being an experienced teacher wants to read more on quality and understand the concepts before preparing his own submissions.

6. Yash Raj Singh is a student of Education at the postgraduate level. He intends to specialize in quality assurance in higher education, and also prepare his masters dissertation on a topic related to this theme. He is looking for a beginner's guide on this subject that would lead him to more literature, helping him understand the basics better.

This module is targeted at people like the above profiles. If you can relate your tasks to any of the above profiles, you will be able to get maximum advantage from this module. As the module has been designed for beginners, it may not be useful to those who already have a significant understanding of the topic.

## 0.2 Learning Outcomes

After reading this module and working on the reflective exercises, you are expected to be able to:

- Explain the role of higher education in the society;
- Define quality in your own words;
- Describe the history of quality movement and identify its prominent thinkers;
- Outline the quality framework given by some quality "GURUS";
- Analyze quality in higher education from different perspectives;
- Discuss the process and components of quality assurance;
- Use various tools for quality assurance;
- Explain different models of quality assurance in education;
- Describe the international practices in quality assurance in higher education; and
- Differentiate key concepts used in quality assurance.

## 0.3 Concept Map

A concept map is a graphical representation of ideas/ concepts put together showing their relationships. It gives a Gestalt view of the concepts under discussion and is useful as an aid to memory. Concept maps are also useful to organize ideas and presentations. This module has been organized as given in the concept map in Fig.1 (See page 4).

## 0.4 User Instructions

You may like to use this module in the way you prefer – from the beginning to the end or specific parts of it. However, in order to get the best out of this document, we recommend a linear pattern of usage. Start in the beginning and continue till the end. You will come across 'Reflective Exercises' at the end of each chapter. Please do these by giving a break to your study. Each of these exercises will take about 20-40 minutes. Write your answers in a 'note book' or 'journal'. You may like to share it with a colleague and discuss it as well. It is envisaged that critical reflection will help you attain the learning outcomes.

The module has been designed for use in a variety of educational institutions across many countries, particularly the commonwealth nations. Though the module is India specific, other countries can use it by adapting the content appropriately. As a general guideline, we would like to recommend the adaptation of the following sections that are India specific:

1.1 Role of Higher Education in the Society (minor adaptation)

1.2 NAAC's Core Values (replacement required)

3.2 Quality Movement in Indian Higher Education (replacement required)

9.2.1 Internal Quality Assurance Cell (minor adaptation)

## 0.5 Additional Readings

The NAAC brings out a quarterly Newsletter to update the developments in the field of quality in higher education. It has also brought out many other publications that are available on its website. Besides, there is a vast amount of information available on the topic that could be used to further your understanding of the topic. The references in this document could be your starting point. There is also a list of websites at the end that you may like to visit from time to time to get updated on the subject.

Let us begin…

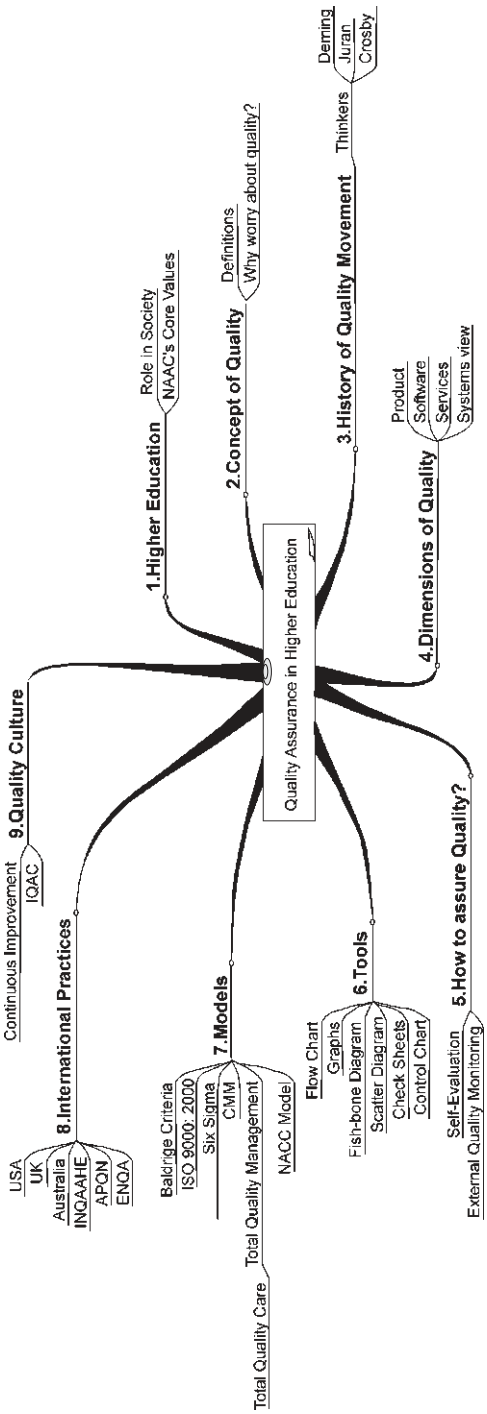


**Fig. 1: Concept map of this module**

# 1. Higher Education

In a society full of diversity, ideologies and opinions, higher education means different things to different people. The pluralism of views is quite inevitable and some would opine it should be like that only. However, as we intend to discuss and learn more about quality in higher education, we should ask ourselves, what is *higher* in higher education? You, as a teacher/stakeholder of higher education, will agree that it is not just about the higher level of educational structure in the country. There is more to it. In terms of the level, higher education includes college and university teaching-learning towards which students' progress to attain higher educational qualification. Higher education imparts in-depth knowledge and understanding so as to advance the students to new frontiers of knowledge in different walks of life (subject domains). It is about knowing *more and more* about *less and less*. It develops the student's ability to question and seek truth and makes him/her competent to critique on contemporary issues. It broadens the intellectual powers of the individual within a narrow specialization, but also gives him/her a wider perspective of the world around. According to Ronald Barnett (1992) there are four predominant concepts of higher education:

i) *Higher education as the production of qualified human resources*. In this view, higher education is seen as a process in which the students are counted as "products" absorbed in the labour market. Thus, higher education becomes input to the growth and development of business and industry.

ii) *Higher education as training for a research career*. In this view, higher education is preparation for qualified scientists and researchers who would continuously develop the frontiers of knowledge. Quality within this viewpoint is more about research publications and transmission of the academic rigour to do quality research.

iii) *Higher education as the efficient management of teaching provision*. Many strongly believe that teaching is the core of educational institutions. Thus, higher education institutions focus on efficient management of teaching-learning provisions by improving the quality of teaching, enabling a higher completion rate among the students.

iv) *Higher education as a matter of extending life chances*. In this view, higher education is seen as an opportunity to participate in the development process of the individual through a flexible, continuing education mode.

Interestingly, all these four concepts of higher education are not exclusive; rather they are integrated and give an overall picture of what *higher* is in higher education. If we look at the activities of colleges and universities, we will realize that teaching, research and extension form the three main functions of higher education.

## 1.1 Role of Higher Education in the Society

Higher education is generally understood to cover *teaching*, *research* and *extension*. If we critically analyze the different concepts of higher education, we can list the various roles higher education plays in the society. Higher education is the source or feeder system in all walks of life and therefore supplies the much-needed human resources in management, planning, design, teaching and research. Scientific and technological advancement and economic growth of a country are as dependent on the higher education system as they are on the working class. Development of indigenous technology and capabilities in agriculture, food security and other industrial areas are possible because of our world-class higher education infrastructure. Higher education also provides opportunities for life long learning, allowing people to upgrade their knowledge and skills from time to time based on the societal needs. The Kothari Commission (1966) listed the following roles of the universities (higher education institutions in the modern society):

- to seek and cultivate new knowledge, to engage vigorously and fearlessly in the pursuit of truth, and to interpret old knowledge and beliefs in the light of new needs and discoveries;
- to provide the right kind of leadership in all walks of life, to identify gifted youth and help them develop their potential to the full by cultivating physical fitness, developing the powers of the mind and cultivating right interests, attitudes and moral and intellectual values;
- to provide the society with competent men and women trained in agriculture, arts, medicine, science and technology and various other professions, who will also be cultivated individuals, imbibed with a sense of social purpose;
- to strive to promote quality and social justice, and to reduce social and cultural differences through diffusion of education; and
- to foster in the teachers and students, and through them in the society generally, the attitudes and values needed for developing the 'good life' in individuals and society (GOI, 1966, p. 497-8).

The report of the UNESCO International Commission on Education in the 21st Century titled "Learning: The Treasure Within" (popularly known as Delors Commission) emphasized four pillars of education: learning to know, learning to do, learning to live together and learning to be. While, higher education intends to inculcate all these four in individuals and the society, the report highlighted the following specific functions of higher education:

- To prepare students for research and teaching;
- To provide highly specialized training courses adapted to the needs of economic and social life;
- To be open to all, so as to cater to the many aspects of lifelong education in the widest sense; and
- To promote international cooperation through internationalization of research, technology, networking, and free movement of persons and scientific ideas (UNESCO, 1996).

## 1.2 Core Values of NAAC

The Indian higher education system is in a constant state of change and flux due to the increasing needs of expanding access to higher education, impact of technology on the delivery of education, increasing private participation and the impact of globalization. Taking cognizance of these developments and the role of higher education in society, NAAC has developed five core values: contributing to national development, fostering global competencies among students, inculcating a value system in students, promoting the use of technology and quest for excellence. The detailed explanation of these values from the NAAC (2004) document on *Guidelines for Re-Accreditation* is presented below.

i) *Contributing to national development*: Most of the Higher Education Institutions (HEIs) have a remarkable capacity to adapt to change, and at the same time pursue the avowed goals and objectives they have set forth for themselves. Contributing to national development has always been a goal of Indian HEIs, explicitly or implicitly. HEIs have a significant role in building on changes to the advantage of the country and can contribute to national development, for example, by serving the cause of social justice, ensuring equity and increasing access to higher education. The HEIs should respond to the goals of national development in the changing context.

ii) *Fostering global competencies among students*: The developments in the global scenario make it imperative for the NAAC to include in its scope of assessment the development of skills of students in India such that their skills are at par with those of their counterparts abroad. With liberalization and globalization of economic activities, the need to develop human resources of a high caliber and, consequently, the demand for higher education at nationally comparable and internationally acceptable standards has increased. While increasing access to higher education and ensuring social justice will continue to be important objectives of national development, developing internationally and inter-culturally competent human resources is of equal importance. Therefore, the HEIs should prepare students with global competencies to successfully face the changing global scenario. This requires the HEIs to be innovative, creative and entrepreneurial in their approach to skills development among students. This may involve collaborating with industries, networking with the neighbourhood and fostering a closer relationship between the worlds of work and learning.

iii) *Inculcating a value system in students*: Although skills development is critical to the success of students in the job market, skills are of no value in the absence of an appropriate value system. HEIs have the responsibility of inculcating a desirable value system in students. In a country like India with cultural pluralities and diversities, it is essential that students imbibe values commensurate with social, cultural, economic and environmental realities at the local, national and universal levels. There can be no dispute about inculcating core universal values like truth and right conduct, as well as the values emphasized in the various policy documents of the country. The values sown in the early stages of education, mostly aimed at cooperation and mutual understanding have to be re-emphasized in HEIs by appropriate campus experiences.

iv) *Promoting the use of technology*: Most of the significant developments that one can observe today can be attributed to the impact of science and technology. While the advantages of using modern tools in day-to-day life are well recognized, the use of technology in our way of 'learning' and 'administering' leaves much to be desired. The degree of use of technological innovations in educational transactions, both academic and administrative, indicates that our system of education is still uncomfortable with new technology. At a time when our educational institutions are expected to do more with less input, they should make proper use of readily available technological innovations.

Obviously, traditional methods of delivering higher education have become inadequate. To keep pace with the developments in other spheres of human endeavour, HEIs have to build on the recent technological developments and enrich the learning experiences they provide to students. The campus community may need to be prepared adequately to make the optimum use of information and communication technologies (ICT). Conscious effort is needed to invest on hardware and to train the faculty suitably to overcome their initial reluctance in using anything new and gadget-oriented.

In addition to using technology as a learning resource, managing the activities of the institution in a technology-enabled way is sure to contribute to effective institutional functioning. Effective use of ICT in HEIs involves providing ICT literacy to the campus community, using ICT for resource sharing and networking, using ICT-enabled administrative processes, etc.

v) *Quest for excellence*: While contributing to nation building and development of students, institutions should also demonstrate the drive to develop themselves into centres of excellence.

Excellence in all that they do will contribute to the overall development of the system of higher education. The seven criteria developed by NAAC to measure excellence are in fact the main processes for developing the capabilities of an institution. Establishment of an Internal Quality Assurance Cell (IQAC) in each of the HEIs would help develop and raise their capabilities as institutions. The seven criteria are: curricular aspects; teaching, learning and evaluation; research, consultancy and extension; infrastructure and learning resources; student support and progression; organization and management; and healthy practices. One of the major outcomes of the IQAC establishment would be the internalization and institutionalization of quality so that the institution strives to excel in serving its students and other stakeholders. The quest to become a quality institution is in itself a core value that HEIs have to imbibe and demonstrate in their functioning.

In order to illustrate the value framework, Prasad (2005) has identified some parameters that are given in Table 1.

**Table 1: Indicative parameters of the value framework**

| Values / Goals | Suggested Parameters / Activities |
|---|---|
| 1. Contribution to national development | • More access with equity<br>• Developmental thrust in identification of research areas and academic programmes<br>• Community engagement |
| 2. Fostering global competencies amongst students | • Development of generic skill<br>• Development of application skills<br>• Development of life skills |
| 3. Inculcating value system in students | • Value integration in academic programmes<br>• Value integration in management practices<br>• Value inculcation through co-curricular and extra-curricular activities |
| 4. Promoting the use of technology | • Enrichment of learning<br>• Increasing access – online programmes<br>• System management |
| 5. Quest for excellence | • Development of benchmarks of excellence<br>• Best practices application<br>• Institutionalization of continuous improvement systems |

## 1.3 Summary

Higher education is the backbone of any society. It is the quality of higher education that decides the quality of human resources in a country. Higher education, as we see today, is a complex system facilitating teaching, research, extension and international cooperation and understanding. The core values of NAAC for higher education system in India envisage: national development, fostering global competitiveness, including ethical values, promote use of technology and create an atmosphere and quest for excellence.

In the next section, we will discuss the basic concept of 'quality' and why it is so important today.

### Reflective Exercise

1. How do you visualize higher education? Do you agree with the discussion above? If yes or no, explain why? Explain in your own words in a separate note-book/journal. Discuss your views with other colleagues in your institution whenever possible to develop a common understanding.

2. How are the core values of NAAC applied to your institution? Discuss each of the values in your own context and reflect on its significance.

# 2. Concepts of 'Quality'

'Quality' is a much-debated term. To some it is like 'beauty' that lies in the eye of the beholder! Those who believe in this are 'relativists', whereas those who believe quality can be specific attributes that can be identified, they are 'objectivists'. The word quality comes from the Latin word *qualis* meaning 'what kind of'. With a variety of meanings and connotations, it has been referred to as a 'slippery concept' (Pfeffer and Coote, 1991). To illustrate the slippery and elusive nature of quality and the confusion associated with it many authors (Nigvekar, 1996; Warren *et al*, 1994; Sallis, 1996) have referred to the highly cited words of Pirsig (1974).

> Quality … you know what it is, yet you don't know what it is. But that's self-contradictory. But some things *are* better than others, that is, they have more quality. But when you try to say what the quality is, apart from the things that have it, it all goes *poof*! There's nothing to talk about it. But if you can't say what Quality is, how do you know what it is, or how do you know that it even exists? If no one knows what it is, then for all practical purposes, it doesn't exist at all. But for all practical purposes it really *does* exist… So round and round you go spinning mental wheels, and nowhere finding any place to get traction. What the hell is Quality? What it is? (p. 179).

This implies that quality means different things to different people.

## 2.1 Defining Quality

The British Standard Institution (BSI) defines quality as "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs" (BSI, 1991). Green and Harvey (1993) identified five different approaches to defining quality:

- in terms of *exceptional* (exceeding high standards and passing a required standard);
- in terms of *consistency* (exhibited through "zero defects" and "getting right the first time", making quality a culture);
- as *fitness for purpose* (meaning the product or service meets the stated purpose, customer specifications and satisfaction);

- as *value for money* (through efficiency and effectiveness); and
- as *transformative* (in term of qualitative change).

These different notions of quality have led Reeves and Bednar (1994) to conclude "…The search for a universal definition of quality and a statement of law like relationship has been unsuccessful". According to Gummesson (1990) it might be useful to create an insight into the many dimensions that form a fuzzy entity referred to as quality through social consensus rather than defining it. Garvin (1988) classified the various definitions of quality into five major groups:

(1) *Transcendent definitions*. These definitions are subjective and personal. They are eternal but go beyond measurement and logical description. They are related to concepts such as beauty and love.

(2) *Product-based definitions*. Quality is seen as a measurable variable. The basis for measurement is objective attributes of the product.

(3) *User-based definitions*. Quality is a means for customer satisfaction. This makes these definitions individual and partly subjective.

(4) *Manufacturing-based definitions*. Quality is seen as conformance to requirements and specifications.

(5) *Value-based definitions*. These definitions define quality in relation to costs. Quality is seen as providing good value for costs (Largosen *et al*, 2004).

Quality has a few central ideas around which the whole concept revolves: Quality as absolute, Quality as relative, Quality as a process, and Quality as culture.

When we consider quality as absolute, it is given and considered as the highest possible standard. For example the picture of "Mona Lisa" by Da Vinci, the Egyptian Pyramids and the Taj Mahal are works of high standards and quality. In product terms, they are attached with high 'brand' values, status and positional advantages. Educational institutions such as Oxford, Cambridge and Stanford in the west have this absolute quality standard, though in the case of education it might still be perceptual. Quality as relative suggests that the quality of a product or service can be described in relative terms. Quality here can be measured in terms of certain specifications. According to Mukhopadhyay (2005) the adherence to "product specification is actually the minimum conditions for quality, but not the sufficient

condition. The sufficient condition is customer satisfaction and beyond" (p. 19). 'Quality as a process' suggests that in order to achieve quality of a product or service, it must undergo certain processes and conform to the procedural requirements. Thus, quality is the outcome of systems and procedures laid down for the purpose. The last one – quality as a culture – recognizes the importance of organizational view of quality as a process of transformation, where each entity is concerned and acknowledges the importance of quality. In educational institutions we are particularly concerned with the latter, though all other ideas of quality too have their respective places. Subsuming a wide range of discussions, Barnett (1992) quotes a 'suggestive' definition by Barrow (1991) to define 'quality' in higher education:

> …a high evaluation accorded to an educative process, where it has been demonstrated that, through the process, the students' educational development has been enhanced ... not only have they achieved the particular objectives set for the course but, in doing so, they have also fulfilled the general educational aims of autonomy of the ability to participate in reasoned discourse, of critical self-evaluation, and of coming to a proper awareness of the ultimate contingency of all thought and action (p. 61).

## 2.2 Why Worry about Quality?

As teachers, principals, heads of departments and planners and policy makers in education, you may be having this question in your mind – why worry about quality? It is not just because of the UGC directive that you should think of quality, rather quality should be a bottom-up approach and every one should be conscious of why we should worry about quality of our teaching, programmes and institutions. Some of the reasons are:

1. *Competition*: We are entering a new regime, where competition among educational institutions for students and funds will be highly significant. With globalization and the GATS (Global Agreement on Trade in Services), the educational environment will be seized by increased competition. In order to survive in such a situation, educational institutions need to worry about their quality.

2. *Customer satisfaction*: Students, parents or sponsoring agencies as customers of the educational institutions are now highly conscious of their rights or getting value for their money and time spent. They are now demanding good quality teaching and receiving employable skill sets, and thus we should constantly worry about the relevance of our courses and programmes to the needs of the labour market.

3. *Maintaining standards*: As educational institutions, we are always concerned about setting our own standard and maintaining it continuously year after year. In order to maintain the standard, we should consciously make efforts to improve quality of the educational transactions as well as the educational provisions and facilities.

4. *Accountability*: Every institution is accountable to its stakeholders in terms of the funds (public or private) used on it. Concern for quality will ensure accountability of the funds utilised and inform the stakeholders about taking appropriate decisions. Thus, quality can be considered as a monitoring mechanism.

5. *Improve employee morale and motivation*: Your concern for quality as an institution will improve the morale and motivation of the staff in performing their duties and responsibilities. If a quality system is in place, the internal processes would be systematic making every department complementing each others service domain and helping in developing internal customer satisfaction leading to high morale and motivation.

6. *Credibility, prestige and status*: If you are concerned about quality, continuously and not once in a while, it will bring in credibility to individuals and your institution because of consistency leading to prestige, status and brand value.

7. *Image and visibility*: Quality institutions have the capacity to attract better stakeholder support, like getting merited students from far and near, increased donations/ grants from philanthropists/ funding agencies and higher employer interest for easy placement of graduates.

## 2.3 Summary

Quality has been defined differently in different contexts. It is a much used and least understood term. In this section, we discussed the ways in which quality can be looked at – from 'zero defect' to 'fitness for purpose'. But, quality in higher education means the educational process is such that it ensures students achieve their goals and thereby satisfies the needs of the society and help in national development.

In the next section, we will discuss the history of quality movement in general and quality in Indian higher education in particular.

### Reflective Exercise

1. What do you mean by 'quality'? Define quality in your own words.
2. Which concerns drive you to do quality work and why?

# 3. History of Quality Movement

Quality as a concept is a 20th century phenomenon that has its roots in the industry and management. Quality became an issue with the advent of industrialization and adoption of new scientific approach to management based on strict division of labour as propounded by F.W.Taylor. With mass-production, and breaking down of work into smaller and repetitive tasks handled by machines, the role of workers for self-checking of quality was reduced. In the days of craftsmanship, the responsibility of quality remained with the worker. The later stage necessitated the need for inspection of the products to ensure they met specifications before they left the factory. This came to be known as 'quality control'.

In the initial days of quality movement in the United States and Japan (where it was more popular) statistical approaches ruled the domain. Walter A. Shewhart (1931) of Bell Laboratories used statistical process control (SPC) to study variation in the performance of systems. Later on, W. Edwards Deming, a student of Shewhart using SPC helped engineers during the World War II to produce bullets. Post World War, Deming focused on his theory of management based on quality principles. He became a pioneer both in Japan and America, and the Japanese Union of Scientists and Engineers (JUSE) established the Deming Prize in 1951 in recognition of his work. The intention here is not to provide a comprehensive historical review, but to give you a background of the quality movement. There are many scholars who have contributed significantly to what we know today in the field of 'quality'. Some of them are W. Edwards Deming, Joseph Juran, Philip B. Crosby, Kauru Ishikawa and Genichi Taguchi. We will discuss in detail contribution of some of them in the next sub-sections. However, it is important to look at the evolution of the concepts in quality. Table 2 gives the chronology of quality movement, and Table 3 shows the hierarchy of quality management.

**Table 2: The chronology of quality movement**

| | |
|---|---|
| Pre-1900 | Quality as an integral element of craftsmanship |
| 1900-1920 | Quality control by foreman |
| 1920-1940 | Inspection-based quality control |
| 1940-1960 | Statistical process control |
| 1960-1980 | Quality assurance/total quality control (the quality department) |
| 1980-1990 | Total quality management |
| 1990-Present | TQM, the culture of continuous improvement, organization-wide quality management |

*Source:* Sallis (1996).

**Table 3: Hierarchy of quality management**

| | |
|---|---|
| **Total Quality Management** | • Involves supplier and customers<br>• Aims for continuous improvements<br>• Concerns products and processes<br>• Responsibility with all workers<br>• Delivered through team work |
| **Quality Assurance** | • Use of statistical process control<br>• Emphasis on prevention<br>• External accreditation<br>• Delegated involvement<br>• Audit of quality systems<br>• Cause and effects analysis |
| **Quality Control** | • Concerned with product testing<br>• Responsibility with supervisors<br>• Limited quality criteria<br>• Some self-inspection<br>• Paper based system |
| **Inspection** | • Post production review<br>• Re-working<br>• Rejection<br>• Control of workforce<br>• Limited to physical products |

*Source*: Dale and Plunkett (1980).

## 3.1 Leading Thinkers on Quality

Three of the most important contributors to the evolution of the quality movement are W. Edwards Deming, Joseph Juran, and Philip B. Crosby. Though all three of them have concentrated on quality in the industrial and manufacturing sector, discussion on quality is incomplete without exploring their philosophies. Their contributions can also be applied to other sectors, including education. As students of education, we should strive to extract the best of each of these thinkers and apply them in our own context. Our focus here is on these three gurus of quality.

### 3.1.1 W. Edwards Deming

Deming is regarded as the father of quality movement. He started his career in the late 1920s as a summer employee at Western Electric's Hawthorne plant at Chicago, where Elton Mayo and his team discovered the famous "Hawthorne Effect". After he moved to US Department of Agriculture, Deming started collaboration with Walter A. Shewhart working at Bell Laboratories. Deming worked on Shewhart's statistical methods to provide consultancy to industries in Japan, where he received more recognition. In 1982, Deming's important book on transforming American management was published under the title

"*Out of the Crisis*". Here Deming is concerned about the failure of the management to plan for future and foresee problems before they arise. According to him fire-fighting and short-term thinking bring in waste and raises costs. He stressed that the responsibility for quality remains with the top management. He emphasized on prevention rather than cure as the key to quality (Deming, 1986). Deming's theory of quality management is often summarized as 14 points for ready reference as listed in Table 4.

**Table 4: Deming's 14 point philosophy**

| |
|---|
| 1. Create constancy of purpose for improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs. |
| 2. Adopt the new philosophy. Organization can no longer compete if they continue in the old way of accepting delays, mistakes and defects. They have to make the required shift and adopt new ways of working. |
| 3. Cease dependence on mass inspection to achieve quality. Instead of inspection at the end, staff should be trained to monitor and develop their own quality. |
| 4. End the practice of awarding business on the basis of price tag alone. |
| 5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus to constantly decrease costs. |
| 6. Institute training on the job. Failure to use the available talent in the organization is a greatest waste. Training is a powerful tool to improve quality. |
| 7. Institute leadership. Management must lead by example and not just supervise. Leadership should help people to do a job better. |
| 8. Drive out fear, so that everyone may work effectively for the company. |
| 9. Break down the barriers between departments. |
| 10. Eliminate slogans, exhortations, and targets, asking for new levels of productivity without providing the workforce with the methods to do the job better. |
| 11. Eliminate work standards that prescribe numerical quotas. |
| 12. Remove the barriers that rob people of their right to pride of workmanship. This is to remove the appraisal system that encourages competition among staff. |
| 13. Institute a vigorous programme of education and self-improvement. |
| 14. Put everyone in the company to work to accomplish the transformation. |

### 3.1.2 Joseph Juran

Juran defined quality as 'fitness for purpose'. According to him, a product or service can meet its specification and yet not be fit for its purpose. The specification may be faulty and thus the specification should be what the customer wants. He identified three steps to quality improvement:

1. Structural annual improvement plans.
2. Training for the whole organization.
3. Quality directed leadership.

Like Deming, Juran too is highly respected in Japan and in 1981 received the prestigious Order of the Sacred Treasure in Japan. According to Juran poor quality is the result of the failure of the management. He also opined that 85% of the problems in an organization is due to systems failure and the remaining 15% due to individuals (Juran, 1989). Juran recommends a ten steps approach to quality improvement, as shown in Table 5. According to Juran, teamwork is the secret of quality management.

**Table 5: Juran's quality improvement steps**

| | |
|---|---|
| 1. | Create awareness of the need and opportunity for improvement. |
| 2. | Set explicit goals for improvement. |
| 3. | Create an organizational structure to drive the improvement process. |
| 4. | Provide appropriate training. |
| 5. | Adopt a project approach to problem solving. |
| 6. | Identify and report progress. |
| 7. | Recognise and reinforce success. |
| 8. | Communicate results. |
| 9. | Keep records of changes. |
| 10. | Build an annual improvement cycle into all company processes. |

### 3.1.3 Philip B. Crosby

Crosby is probably the most influential management thinker in United States and Europe in the field of quality. He focuses on the senior management, and has given two popular statements – "Quality is Free" and "Zero defects". According to him quality is:

- Not Goodness or luxury
- Not Intangible
- Not Unaffordable

Quality does not originate in the workers. It originates in the quality department.

Crosby is best known for his four absolutes of quality management (Crosby, 1984):

1. The definition of quality is conformance to customer requirements.
2. The system to reach quality is prevention and not detection.
3. The standard of performance is zero defects.
4. The measurement of quality is the price of non-conformance.

The quality management of Crosby can be listed in 14 steps as given in Table 6.

**Table 6: Crosby's Fourteen Steps**

| | |
|---|---|
| 1. | Management should be convinced of the need for quality improvement, and there should be full commitment. |
| 2. | Set up a quality team to drive the programme. |
| 3. | Introduce quality management procedures. |
| 4. | Define and apply the principle of the cost of quality. |
| 5. | Institute a quality awareness programme. |
| 6. | Introduce corrective action procedures. |
| 7. | Plan for the implementation of zero defects. |
| 8. | Implement supervisory training. |
| 9. | Announce zero defects day to launch the process. |
| 10. | Set goals to bring about action. |
| 11. | Set up employee-management communications systems. |
| 12. | Recognise those who have actively participated. |
| 13. | Set up quality councils to sustain the process. |
| 14. | Do it all over again. |

### 3.1.4 Implications for Higher Education

Deming, Juran and Crosby may be given the credit for developing the vocabulary on quality management. Higher education institutions can learn a great deal from these ideas. We can summarize a few points as:

1. Leadership and commitment of top management plays a significant role in quality improvement.
2. Creating an environment for learning and staff development is crucial to do tasks right every time.
3. Adopt new philosophies and technologies that can improve the quality.
4. Encourage teamwork and participatory management.
5. Develop a communication strategy to report progress and results.
6. Recognize the efforts of staff without creating a competitive environment.
7. Put appropriate systems and processes in place as per the needs of the stakeholders.
8. Encourage quality circles and a culture of quality.

## 3.2 Quality Movement in Indian Higher Education

The University Grants Commission (UGC) with its statutory powers is expected to maintain quality in Indian higher education institutions. Section 12 of the UGC Act of 1956 requires UGC to be responsible for "the determination and maintenance of standards of teaching, examinations and research in universities". To fulfill this mandate, the UGC has been continuously developing mechanisms to monitor quality in colleges and universities directly or indirectly. In order to improve quality, it has established national research facilities, and Academic Staff Colleges to re-orient teachers and provide refresher courses in subject areas. The UGC also conducts the National Eligibility Test (NET) for setting high standards of teaching.

Various committees and commissions on education over the years have emphasized directly or indirectly the need for improvement and recognition of quality in Indian higher education system. The concept of autonomous colleges as recommended by Kothari Commission (1964-66) has its roots in the concept of quality improvement. Since the adoption of the National Policy on Education (1968), there has been a tremendous expansion of educational opportunities at all levels, particularly in higher education. With the expansion of educational institutions, came the concern for quality. The constitutional amendment in 1976 brought education to the concurrent list making the central government more responsible for quality improvement (Stella and Gnanam, 2003). The New Education Policy (1986) emphasized on the recognition and reward of excellence in performance of institutions and checking of sub-standard institutions. Consequently, the Programme of Action (PoA) in 1986 stated, "As a part of its responsibility for the maintenance and promotion of standards of education, the UGC will, to begin with, take the initiative to establish an Accreditation and Assessment Council as an autonomous body". After eight years of continuous and serious deliberations, the UGC established NAAC at Bangalore as a registered autonomous body on 16th September 1994 under the Societies Registration Act of 1860.

The milestones in the emergence of NAAC can be identified as follows (Stella, 2000):

1986: UGC constituted a 15-member committee on Accreditation and Assessment Council under the chairmanship of Dr. Vasant Gowarikar.

1987-1990: Nine regional seminars and a national seminar organized to debate Gowarikar Committee report.

1990: Dr Sukumaran Nair's project report submitted to UGC that reflected a consensus to have an accreditation agency accountable to UGC.

1992: The revised New Education Policy reiterated all round improvement of educational institutions.

1994: Prof. G. Ram Reddy committee appointed to finalize the memorandum of association and rules and regulation of the accreditation board (July 1994).

1994: National Assessment and Accreditation Council established at Bangalore (September 1994).

The main objectives of NAAC as envisaged in the Memorandum of Association (MoA) are to:

- grade institutions of higher education and their programmes;
- stimulate the academic environment and quality of teaching and research in these institutions;
- help institutions realize their academic objectives;
- promote necessary changes, innovations and reforms in all aspects of the institutions working for the above purpose; and
- encourage innovations, self-evaluation and accountability in higher education.

Like NAAC (which is responsible for colleges and universities), there are other statutory bodies in India to assure quality in professional education. Some of these are:

- All India Council for Technical Education (AICTE)
- National Council for Teacher Education (NCTE)
- Medical Council of India (MCI)
- Indian Nursing Council (INC)
- Bar Council of India (BCI)
- Rehabilitation Council of India (RCI)
- Distance Education Council (DEC)
- Indian Council for Agricultural Research (ICAR)

The AICTE established the National Board of Accreditation (NBA) in 1994 to accredit programmes offered by technical institutions. The NBA accredits programmes and it is a voluntary process like that of NAAC. Other professional statutory bodies mostly undertake review exercises to recognize or de-recognize the institutions on the basis of their quality audit. Thus, quality issue is on the top of the agenda of Indian higher education.

## 3.3 Summary

Quality as a concept has its origin in the business and industry in the 20th century. However, human beings were always conscious of what quality was, and thus, the responsibility of quality remained with individual workers. But with the emergence of mechanization came the issues of inspection, control and assurance of quality. Leading thinkers like Deming, Juran and Crosby give us guidelines to assure quality, which also have implications for higher education.

In this section, we have also discussed the quality movement in Indian higher education, particularly the efforts of the UGC in setting up NAAC. In the process we also identified other statutory bodies in India that are responsible for quality in other technical and professional areas.

### Reflective Exercise

1. Discuss at least one point from each of the views of Deming, Juran and Crosby in the context of Quality in education.

2. "Concern for quality is high in Indian higher education". Discuss for and against the statement with one of your colleagues.

# 4. Dimensions of Quality in Higher Education

Quality, as we know so far, was originally developed in the manufacturing industry. In the area of higher education, the adoption of quality control has been superficial and diluted by the exercise of academic freedom (Largosen *et al*, 2004). Further, the prevailing culture of universities is often based on individual autonomy, which is zealously guarded (Colling and Harvey, 1995). Thus, it is usually difficult to apply the features of quality to higher education considering the fact that quality requires teamwork (Boaden and Dale, 1992). However, the quality of higher education is very important for its stakeholders. Notably, providers (funding bodies and the community at large), students, staff and employers of graduates are important (Srikanthan and Dalrymple, 2003). In this section, we will discuss quality from the perspective of three groups and distil a common framework for the dimensions of quality in higher education based on Owlia and Aspinwall (1996). The most commonly grouped dimensions of quality are product, software and service.

## 4.1 Product Quality Dimensions

Garvin (1987) proposed the following eight dimensions for quality that, as he stated, can define both product and service quality:

1. *Performance*. It is concerned with the primary operating characteristics of a product. For example, for a TV, the performance comprises of sound and picture quality. In higher education performance is the abilities expected of a graduate.

2. *Features*. Those characteristics that supplement the basic performance functions are called features. In higher education, flexibility of course offering could be a feature.

3. *Reliability*. It is the probability of a product working fault-free within a specified time period. In higher education, it can be considered as to what extent the knowledge gained is correct, and up-to-date.

4. *Conformance*. The extent to which a product meets the established specification/standard. For higher education, it can be defined as the extent of meeting the established educational standards and its own promises to the client.

5. *Durability*. The product's assumed life to perform satisfactorily is durability. In higher education, it can be defined as the depth of learning.

6. *Serviceability*. It is concerned with the repair and field service of the product. In higher education it is concerned with handling of complaints from students, staff and industry. Some also emphasize the continuous updating of their alumni as evidenced by professionals like the Chartered Accountants through their magazines, newsletters and continuing education to provide after training service.

7. *Aesthetics.* In the context of product, it is concerned with the design, looks, colour and presentation, and how the customer views it.

8. *Perceived quality*. This is yet again subjective like aesthetics and 'customers' opinion is more appropriate in service quality dimension. For a product too, through branding, the customer perceives a certain degree of confidence on quality.

Table 7 summarizes the way product dimensions of quality in higher education can be interpreted.

**Table 7: Product dimensions of quality in higher education**

| Dimensions | Definition in higher education |
|---|---|
| Performance | Primary knowledge/skills required for graduates |
| Features | Secondary/supplementary knowledge and skills |
| Reliability | The extent to which knowledge/skills learned is correct, accurate and up to date |
| Conformance | The degree to which an institutional programme/course meets established standards, plans and promises |
| Durability | Depth of learning |
| Serviceability | How well an institution handles customers' complaints? |

*Source*: Owlia and Aspinwall (1996)

## 4.2 Software Quality Dimensions

The characteristics of software as an intangible product are more consistent with higher education. The software quality dimensions widely used in software engineering are: correctness, reliability, efficiency, integrity, usability, maintainability, testability, expandability, portability, reusability and interoperability (Watts, 1987). Owlia and Aspinwall (1996) apply these quality dimensions to higher education, which are given in Table 8.

**Table 8: Software quality dimensions of higher education**

| Dimensions | Definition in higher education |
|---|---|
| Correctness | The extent to which a programme/course complies with the specified requirements |
| Reliability | The degree to which knowledge/skills learned is correct, accurate and up to date |
| Efficiency | The extent to which knowledge/skills learned is applicable to the future career of graduates |
| Integrity | The extent to which personal information is secure from unauthorized access |
| Usability | The ease of learning and the degree of communicativeness in the classroom |
| Maintainability | How well an institution handles customers' complaints? |
| Testability | How fair examinations represent a subject of study? |
| Expandability | Flexibility |
| Portability, reusability and interoperability | The degree to which knowledge/skills learned is applicable to other fields |

*Source*: Owlia and Aspinwall (1996).

## 4.3 Service Quality Dimensions in Higher Education

The service dimension of quality is probably more akin to the educational processes. We know that unlike physical goods, services are ephemeral to the extent that they can be consumed only as long as the activity or the process continues. Thus, there is inseparability of production and consumption. Thus, services can't be stored and are perishable. The consumer is also an integral part of the service process. Thus, in higher education, this framework is more applicable as the teaching learning situations are more like a service. Parasuraman *et al* (1985) identified the following dimensions of service quality:

1. *Reliability*. The service is carried out in the way it is promised.
2. *Responsiveness*. The service is carried out promptly according to the needs of the customers.
3. *Competence*. The staff of the service provider has the knowledge and skills required for delivering the service in a proper way.
4. *Access*. It concerns the location, opening hours, etc.
5. *Courtesy*. How polite, friendly and respectful the employees are.
6. *Communication*. It is the process of keeping the customers informed in a language that they could understand and also listening to them.
7. *Credibility*. How trustworthy, believable and honest the service provider is.

8. *Security*. Freedom from danger, risks or doubt.

9. *Understanding the customer*. The effort of the service provider to understand the needs and wants of the individual customers.

10. *Tangibles*. Physical objects that are needed for carrying out the services such as facilities, equipment, etc.

Owlia and Aspinwall (1996) based on a review of service quality dimensions, present a comprehensive list with their interpretations for higher education in Table 9.

**Table 9: Service Quality dimensions in higher education**

| Dimensions | Definition in higher education |
|---|---|
| Reliability | The degree to which education is correct, accurate and up to date. How well an institution keeps its promises? The degree of consistency in educational process. |
| Responsiveness | Willingness and readiness of staff to help students |
| Understanding customers | Understanding students and their needs |
| Access | The extent to which staff are available for guidance and advice |
| Competence | The theoretical and practical knowledge of staff as well as other presentation skills |
| Courtesy | Emotive and positive attitude towards students |
| Communication | How well lecturers and students communicate in the classroom? |
| Credibility | The degree of trustworthiness of the institution |
| Security | Confidentiality of information |
| Tangible | State, sufficiency and availability of equipment and facilities |
| Performance | Primary knowledge/skills required for students |
| Completeness | Supplementary knowledge and skills, use of computer |
| Flexibility | The degree to which knowledge/skills learned is applicable to other fields. |
| Redress | How well an institution handles customers' complaints and solves problems? |

*Source*: Owlia and Aspinwall (1996)

## 4.4 A Conceptual Framework

Based on the review of literature on the three different approaches to quality in higher education, Owlia and Aspinwall (1996) present a conceptual framework that covers six criteria to depict quality dimensions. These are tangibles, competence, attitude, content, delivery and reliability as shown in Table 10. These dimensions are indicative of the areas that should be of concern to ensure quality in higher education.

**Table 10: Quality dimensions in higher education**

| Dimensions | Characteristics |
|---|---|
| Tangibles | Sufficient equipment/facilities<br>Modern equipment/facilities<br>Ease of access<br>Visually appealing environment<br>Support services (accommodation, sports…) |
| Competence | Sufficient (academic) staff<br>Theoretical knowledge, qualifications<br>Practical knowledge<br>Up to date<br>Teaching expertise, communication. |
| Attitude | Understanding students' needs<br>Willingness to help<br>Availability for guidance and advice<br>Giving personal attention<br>Emotional, courtesy |
| Content | Relevance of curriculum to the future jobs of students<br>Effectiveness<br>Containing primary knowledge/skills<br>Completeness, use of computers<br>Communication skills and team working<br>Flexibility of knowledge, being cross-disciplinary |
| Delivery | Effective presentation<br>Sequencing, timeliness<br>ConsistencyFairness of examinations<br>Feedback from students<br>Encouraging students |
| Reliability | Trustworthiness<br>Giving valid award<br>Keeping promises, match to the goals<br>Handling complaints, solving problems |

*Source*: Owlia and Aspinwall (1996)

## 4.5 Systems View of Quality

Every educational institution is a dynamic system and must be seen in its own uniqueness and totality for quality management (Mukhopadhyay, 2005). In order to look into the different aspects of quality of higher education institutions, it is essential to understand the systems approach to education. The notion of a system is a theoretical abstraction, and can be defined as an organized unitary whole composed of a set of interdependent, interrelated and interacting synergetic elements or sub-systems and delineated by identifiable boundaries from its environmental supra-system. Accordingly the components/sub-systems (which are independent themselves) in an integrated/holistic manner form the system. Thus, the whole is not just a sum total of the sub-systems, but a holistic representation of all the characteristics. What the whole can do/represent, the sub-system cannot. To translate this in the educational context, the

educational institutions exhibit the behaviour of an open system, which has an environment that *inputs* some form of energy to the system, which undergoes *transformation* to give some *outputs* into the environment. Thus, we can consider that higher education institutes have an input sub-system, a transformation sub-system and an output sub-system. As open systems are highly dependent on the environment or external forces, the Higher Education Institution too depends on constant interchange with the environmental factors. Fig. 2 depicts the schematic diagram of a systems view that can be applied to any educational institution. The inputs to the system are human resources (both students and teachers), physical resources in terms of infrastructure and financial resources. Then educational processes and activities related to the curriculum, management and support mechanisms form the transformation sub-system, and the outputs in the system are employable graduates, growth in knowledge through research publications, economic developments, etc.

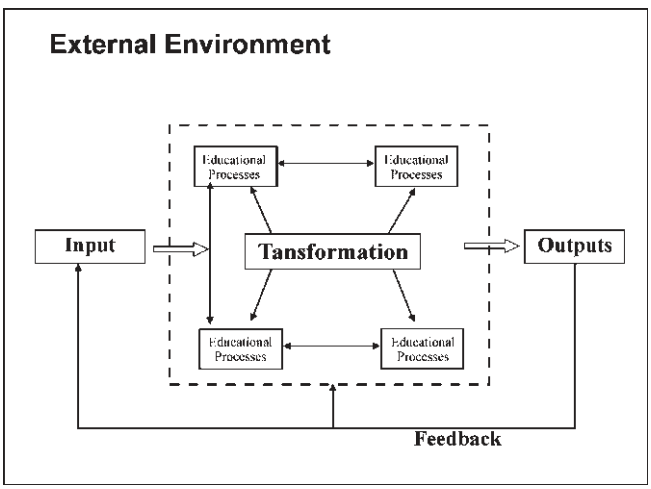


**Fig. 2: Systems Approach**

## 4.6 Summary

As we have seen earlier, quality has different meanings. So also it can be seen from different dimensions/ perspectives – as quality of products, as quality of service, and as quality applied in software. We have presented these perspectives for clarifying how you can view quality in higher education. However, as a general framework to look into quality we can analyze six dimensions – tangibles, competence, attitude, content, delivery and reliability, in educational programmes / institutions.

We also discussed a systems view of quality to emphasize that quality is not just the product, it is also a process; and the quality of inputs too has its impact on the overall quality. This is particularly important in educational systems. In the next section, we will discuss how quality can be assured.

## Reflective Exercise

1. What according to you should be the basis of discussing quality in higher education (product/ software (process)/service)? Justify your decision with arguments.

2. Identify at least 5 important characteristics of quality in higher education according to your view and explain why you consider these to be important.

3. What aspects are important according to you for quality assessment in the three sub-systems of a higher education institution?

# 5. How can Quality be Assessed?

Quality assurance is the responsibility of everyone in an educational institution, though the top management sets the policies and priorities. Thus, assuring quality should be a continuous and ongoing process. It should not be considered as a one time activity for accreditation alone. However, accreditation as external quality monitoring (EQM) can be found in all types of higher education systems (Harvey, 1998).

In spite of the importance of EQM and the credibility attached with the impartial and objective system, developing an internal quality assurance mechanism in every educational institution is highly important. It is in fact, this unit within the higher education institution that will prepare the base for EQM. Thus, understanding the criteria of quality assurance and adhering to the best practices become highly significant. Across the world quality assurance is done in the following ways:

- Self evaluation;
- Peer review by a panel of experts, usually including at least some external panel members and one or more site visits;
- Analysis of statistical information and/or use of performance indicators or the best practices benchmarking;
- Surveys of students, graduates, employers, professional bodies;
- Testing the knowledge, skills and competencies of students (Harman, 1998).

At NAAC, a four-stage process of external quality monitoring/assessment is undertaken covering:

- Identifying pre-determined criteria for assessment;
- Preparation and submission of the self-study report by the unit of assessment;
- On-site visit of the peer team for validation of the report and recommendation of the assessment outcome to NAAC; and
- Final decision by the Executive Committee of NAAC (NAAC, 2005).

## 5.1 Self-evaluation/self-study

Real quality that is sustainable is one that is assessed by self. This is how we know what our strengths and limitations are. Self-evaluation is like looking at ourselves in a 'mirror'. The self-study report required for submission at the time of assessment for accreditation should be self-critical and reflective, as inspection and quality control imposed from outside would not work (Frazer, 1992). Self-evaluation would be an indicator for continuous improvement and a first step for ensuring quality.

## 5.2 Best Practices Benchmarking

Benchmarking is a common topic in business and industry. What it entails is a process of recognizing 'best practices' in the industry and implement them. It is defined as "a continuous systematic process for evaluating the products, services and work processes of organizations that are recognized as representing the best practices for the purpose of organizational improvements" (Spendolini, 1992). Benchmarking as a process has four main activities:

- Comparing one thing with the other
- Creating and using criteria to evaluate differences between two things and recognizing which is better
- Use the experience to identify the direction for change
- Implement the required change to improve (Jackson and Lund, 2000)

Benchmarking in education is a relatively new concept and can bring huge benefits in terms of continuous improvement of quality. As it is based on identification of the best practices, it inculcates competition and constant comparison. At the same time, it is also criticized for being a system of imitation. Moreover, something that has produced satisfactory results in one organization, if replicated, may not produce the same results. Nevertheless, as we compare with the best, and follow the best university or college, it becomes a tool for motivation to change. By following the best model, other institutions can improve their own quality.

In higher education, we are concerned with functional benchmarking, where comparisons are made between higher education institutions as they use similar processes and practices. For example, a best practice in higher education is to have maximum number of teaching days in a semester (say 105 days). Then every HEI should strive to achieve this. Another example of best practice could be that X institute

has 100 per cent placement record of its graduates. It could be a benchmark for others to follow. The NAAC criteria can be used to compare institutions and develop benchmarks. Moreover, the A++ grade institutions can also be identified as the 'best practices' and others can emulate what they do. Thus, quality can be assured through following an example, or striving to meet a benchmark developed through rigorous process of benchmarking. NAAC is bringing out a series on the reports of the peer teams visiting some of the best institutions in the country. This will pave the way for following the best practices.

## 5.3 External Quality Monitoring

EQM has become mandatory in many countries, though it could be a voluntary process. The process of external quality monitoring/assurance reassures external stakeholders such as employers, professional bodies and the general public about the legitimate quality of a higher education institution. It also offers an impartial and objective mechanism for assessing the educational institution by a peer team not directly related to the institution. Visit by a peer team is a common activity in EQM, which critically analyses the self-study report and the quality provisions based on established criteria. The peer team checks institutional reports, records and policies. It also meets and discusses with the top management, principals, HoDs, teachers, students and support staff to make its opinion on quality. In the Indian context, the external quality assurance mechanism is a much-debated concept; especially because universities are autonomous bodies established by an Act of Parliament or State Legislature and are empowered to award degrees. External monitoring is very often considered as an invasion on the 'autonomy' and 'academic freedom' of the educational institutions. To some, the University Grants Commission (UGC) already performs the task of monitoring the universities regularly for funding purpose, and thus no further intervention is needed. The universities, being degree awarding agencies, are responsible for assuring their own quality, and therefore, various internal bodies like the Academic Council, Planning Board, Executive Council, Board of Studies, etc., within the system monitor and undertake corrective measures to assure the graduates are worthy of the degree awarded to them. In the case of colleges, the affiliating universities perform the role of assessing the quality. Thus, EQM to some Indian academics is a borrowed western concept to further widen the gap between the elite and the non-elite institutions. In practice, EQM is a process of continuous improvement, mark of excellence, and recognition of all the efforts of the academics by their peers. NAAC's detailed process of accreditation is discussed under the section Models of quality assessment.

### 5.3.1 Unit of Assessment

Quality assurance and accreditation can be performed at different levels, though the institutional quality assessment model is quite popular in India. Many academics believe that in institutional accreditation, the strengths of good departments and weaknesses of poorly performing units cannot be categorized. Thus, these set of intellectuals favour department-level and programme-wise accreditation. Though such assessment results would be highly useful to the stakeholders, they are practically difficult. However, NAAC recognizes that institutional and department/ programme level assessments are not alternatives, but are mutually complementary to each other.

## 5.4 Market-driven approach

The issue of quality in education has become so important these days that rankings of educational institutions have become a huge business. Universities around the world are being assessed and ranked by media such as the *Times Higher Education Supplement* and *US News*. Globally, for MBA programmes, the ranking of institutions are too competitive with many rankings available to the consumers. Some of these are by *The Economist*, *Business Week*, *Financial Times*, etc. In India too media groups like the *India Today* rank colleges. While these rankings are helpful to the student community to choose the institutions of their choice, the process of arriving at the ranks is quite often criticized and institutions accept the ranks as long as they are at the top. Most of these rankings depend on the 'voices of the alumni' and thus are perception based. The criteria and weight given to the criteria (if any) are never transparent; and most importantly these are not arrived at as a consensus.

## 5.5 Summary

In this section, we discussed the three major ways of assuring quality – self-evaluation, best practice benchmarking, and external quality monitoring. Self-evaluation is a process of continuous improvement and much widely used in institutions. In order to capitalize on the internal quality and to add value to the quality assessment, external quality monitoring/ assessment is preferred all over the world. Thus, many countries use EQM as the strategy to assess the quality of educational institutions. We also highlighted the market driven approach to quality assessment through rankings done by media organizations, and emphasized questionable reliability of their processes and the lack of consensus in their criteria and weight given, making them less useful.

## Reflective Exercise

1. How do you visualize to assure quality in your institution, and why? Discuss the importance of self-evaluation.

2. Differentiate between EQM approach and market-driven approach to assessment of quality.

# 6. Tools for Quality Assessment

Quality assurance is a conscious and planned process, and therefore, we should have some tools and mechanisms to ensure quality. Though quality as such is a 'qualitative' abstraction, there are many 'quantitative' tools available to us for assuring quality. Some are analytical tools and the others are facilitation tools. Using these tools and techniques, we can ensure quality in higher educational institutions. Ishikawa (1982) has identified a set of seven tools that can be used by teams and individuals to interpret available data to derive maximum information. These seven tools are: process flowchart, graphs, Pareto analysis, fishbone diagram, scatter diagram, check sheets and control charts. We will describe and discuss these in brief.

## 6.1 Process Flow Chart

A flow chart is a pictorial/symbolic representation of the stages in a process. It records the series of activities and events in a process in such a way that communication becomes instant and clear. Flowchart is extremely useful when a problem needs systematic approach. Flowchart can help us to identify critical steps and also ensure that all the steps are carried out without fail making it error free, ensuring quality. Use of a flowchart in a laboratory situation can reduce hazards. The author of this monograph has used flowchart to ensure quality in the publication process of a newsletter. An example of flow chart application in educational institution is depicted in Fig. 3.

By following the flowchart of the admission process, it is less likely that any of the departments will make mistakes that may affect the admission cycle. In fact, the development of a flowchart for any activity should be a participatory process by those involved in the task/problem.

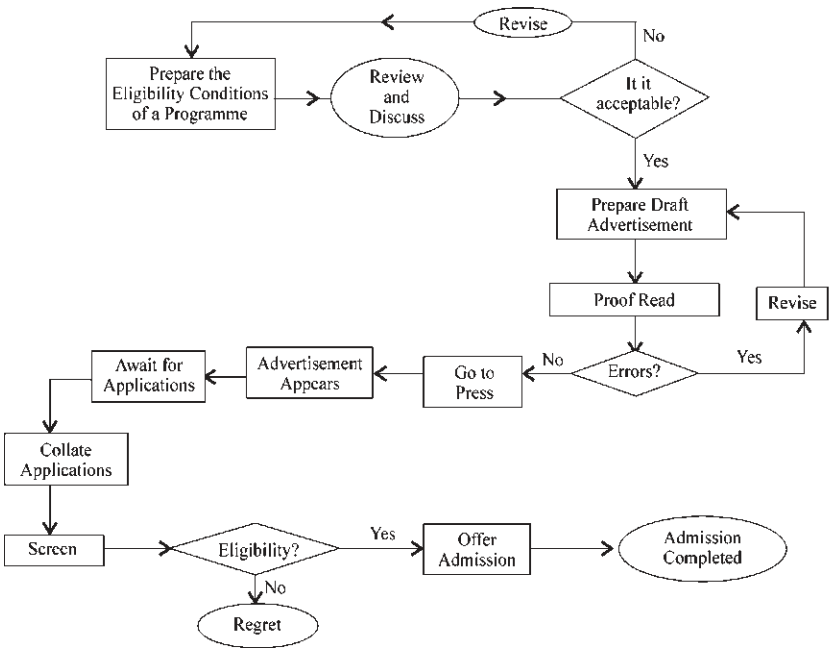


**Fig. 3: Admission Process in a Programme**

## 6.2 Graphs

These are tools to present information in a concise and graphical manner. There are different types of graphs that can be used to represent data for decision-making. Some of these are histograms, pie charts, line graphs, etc. For example, in order to show the popularity of a programme over the years (to showcase the reputation and quality), we can present the number of applications received over the last 5 years for 30 seats in a line diagram, Fig. 4.

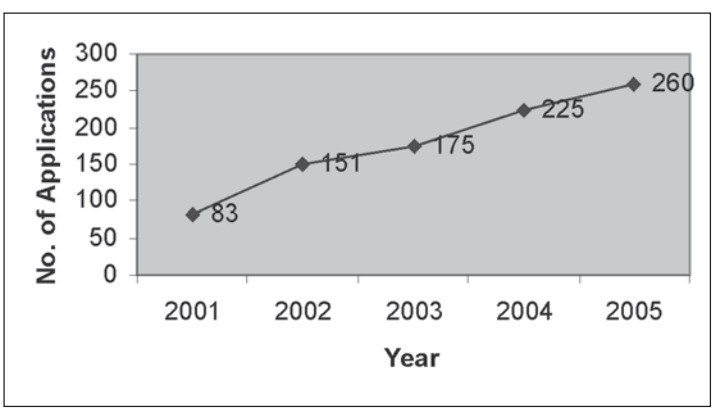


**Fig. 4: Line Diagram**

We can use the histogram to show the quality of faculty in terms of their qualifications, as shown in Fig. 5, and number of papers published in the last year.

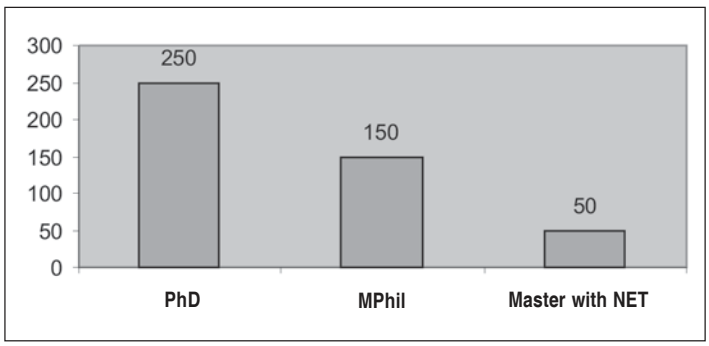


**Fig. 5: Histogram**

## 6.3 Pareto Analysis

Pareto analysis is a tool used to prioritize problems for solutions. It says that 80% of problems stem from 20% of the causes. It is also known as 80-20 rule. Thus, by focusing on the 20%, we can improve 80% of results. This is a very important principle in quality assurance, and thus identifying the critical 20% in performance that will result in 80% solution/satisfaction is very important.

## 6.4 Fish-bone diagram

The fish-bone diagram is also known as cause-and-effect diagram. It is a tool for analysis and open thinking in problem solving. It is also useful in organizing ideas during and after a brainstorming session. In a diagrammatic representation, the effect is placed at the right end of a broad arrow. Major causes are recorded on either side of the effect line. Minor causes are aligned to the respective major causes as clusters, as depicted in Fig. 6.

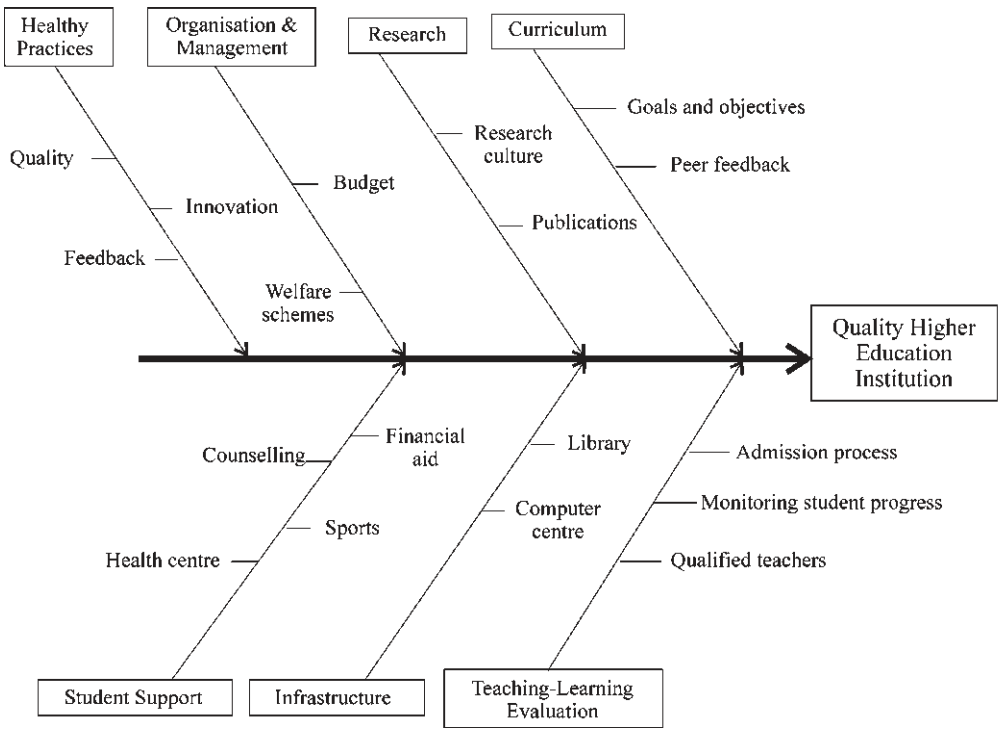


**Fig. 6: Example of Fish-bone Diagram**

## 6.5 Scatter Diagram

The fish-bone diagram provides a simple way to identify causes and effects, whereas the scatter diagram is a method to determine the relationship between the cause and effect in a pictorial manner. Scatter diagrams show pattern of association or otherwise of two variables/parameters. For example, if we see a pattern of poor student attendance in a particular month, using a scatter diagram of attendance record and months, we may decide to cover not so complex topics in that month so that majority of the students can understand and learn important topics that may have bearing on other components of study.

## 6.6 Check Sheets

These are often used as check lists or tally charts to ensure that some tasks in a process are done and measure how well they have been done. It ensures that everything is in order according to the design. To some this is a quality control device by which we can weed out products that lack some checkpoints. For example, during the development of a training manual, a checklist can ensure both academic as

well as production quality by checking the physical design and learning design issues to meet the needs of the target group.

## 6.7 Control Charts

Control charts are primarily used in statistical process control operations in manufacturing and product development to ensure that all the outputs are within an acceptable limit of variations. Thus, control charts show deviations in two possible ways:

- the unavoidable or permissible deviations; and
- the unacceptable deviations.

The control charts depict the upper and lower limits of variations to find out whether a particular product is acceptable or not. The control charts serve as *a priori* method and can be used as a tool for measurement in measuring speed tests of achievement of knowledge/ skills.

## 6.8 Brainstorming

It is one of the most fundamental processes of generating ideas and solutions for problem solving. It involves participation of the stakeholders and thus teamwork is the hallmark of the process. Thus, brainstorming is a key activity in quality assurance. Brainstorming can be used for all the tools discussed above to generate ideas for assuring quality. The process involves knowledgeable and experienced participants who share their ideas on a problem in a free flowing manner without restrictions. One of the major criticisms of brainstorming is that it does not provide objective assessment. But, at the time of brainstorming, a large pool of possible alternatives can be generated which can be later subjected to objective assessment. During the brainstorming session, the following rules may be followed (Sallis, 1996; Bell *et al*, 1994):

- Be clear about the topic of brainstorming
- List all ideas as they are expressed
- Wild ideas are welcome
- Do not criticize people's ideas
- Build on ideas

- Allow everyone to express their ideas
- Record all ideas in a visible manner

In whatever position we are, these tools are helpful to assure quality of our action. These tools can be used both for self-assessment as well as for EQM. They provide symptomatic clues to assure quality, and also provide opportunity to think about quality in a quantitative perspective.

## 6.9 Summary

In this section, we discussed how some of the statistical tools could help us in the process of quality assurance. As we know, it is difficult to measure quality, which is a relative concept. But, it should be our endeavour to make these qualitative abstractions as quantitative as possible. Thereby, we can precisely identify quality from non-quality. Towards this, the tools of quality assurance – flow-charts, graphs, fish-bone diagrams, Pareto analysis, etc are useful to us.

### Reflective Exercise

1. Take up a problem in your institution that you consider is critical for assuring quality. Organize a brainstorming session and record the ideas.
2. Then apply at least one of the tools of quality assurance to determine how you will solve the problem.

# 7. Models of Quality Assessment

As there are different meanings and interpretations of quality, there are different models of quality assurance as well. Across the world, institutions follow different models of quality assurance; particularly country specific and institution specific models. These models are mostly process oriented and emphasize on the development of a system of quality assurance. There are five popular models of quality assurance: Baldrige criteria, ISO 9000-2000, Capability Maturity Model, Six Sigma and Total Quality Management. We will discuss each of these in detail to get an overview so as to have an understanding of different models and criteria adopted in these models. We will also look into accreditation models of ABET, NBA, NAAC, AB of ICAR and DEC.

## 7.1 Baldrige Criteria

In the United States of America, the Malcolm Baldrige National Quality Award is the highest award for performance excellence managed by the National Institute of Standards and Technology (NIST). The American Society for Quality assists in the administration of the award. In order to promote quality awareness and recognize quality achievements, the Congress established this award in the year 1987. The education criteria for performance excellence are designed to help organizations use an integrated approach to organizational performance management that results in:

- Delivery of ever-improving value to students and stakeholders, contributing to education quality;
- Improvement of overall organizational effectiveness and capabilities; and
- Organizational and personal learning (NIST, 2005).

The 2005 criteria for performance excellence in education have seven major categories and several sub-categories that primarily focus on learner-centred excellence. These are summarized along with the point values/weight in Table –11. A brief description of the categories is as follows (NIST, 2005):

- *Leadership*: The leadership category examines how an organization's senior leader guides and sustains the organization. The way an organization's governance addresses the ethical, legal and public responsibilities is also examined.

- *Strategic Planning*: In this category an organization's strategic objectives and action plans are examined. It also analyses how strategic objectives and action plans are deployed, changed and progress is measured.

- *Student, Stakeholder, and Market Focus*: This category examines how an organization determines the requirements, expectations, and preferences of students, stakeholders, and markets. Also of interest here is the relationship with students and stakeholders. Factors that attract students and lead to student and stakeholder satisfaction and loyalty are also examined.

- *Measurement, Analysis and Knowledge Management*: This category examines how an organization selects, gathers, analyses and improves its data, information and knowledge assets. It also examines how the organization reviews organizational performance.

- *Faculty and Staff Focus*: This category examines an organization's work system to facilitate high performance, learning and motivation. Also examined are the organization's efforts to build and maintain a work environment and faculty and staff support climate conducive to performance excellence and to personal and organizational growth.

- *Process Management*: This category focuses on the process management of the organization including key learning-centred processes in the educational programmes, offerings and services available to the students. It also examines the key support processes.

- *Organizational Performance Results*: This is the category of results that examines an organization's performance and improvements in key areas – student learning, results, budgetary provisions, faculty and staff results, leadership and social responsibility.

## 7.2 ISO 9000:2000

In Greek, *isos* is a term meaning uniform, homogeneous — equal — and ISO may be seen as a shortened version of this word (Sprow, 1992). In 1946, the International Organization for Standardization (IOS, but referred as ISO) was founded to develop international standards. Quality system management standards were issued in 1987 by IOS. The ISO 9000 standards were originally conceived for companies in the manufacturing industry to predict the reliability of the products and quality control. However, since the 1990s the application of this standard has spread to other sectors including education and training. The ISO 9000 is a common label that consists of ISO 9001, ISO 9002, ISO 9003, ISO 9004 and their subsets

issued first in 1987. ISO 9000 was revised in 1994 and in 2000. The current one is ISO 9000:2000. The ISO 9001 and 9002 are quality system standards that allow certification by a third party. The ISO 9000 certification indicates that the organization is able to meet the needs and demands of its customers in a planned and controlled manner. But this does not necessarily indicate the products are also of quality.

**Table 11: Baldrige Criteria for Performance Excellence in Education**

| **2005 Categories** | | | **Point value** |
|---|---|---|---|
| 1. Leadership | | | **120** |
| 1.1 | Senior Leadership | 70 | |
| 1.2 | Governance and Social Responsibility | 50 | |
| 2. Strategic Planning | | | **85** |
| 2.1 | Strategy Development | 40 | |
| 2.2 | Strategy Deployment | 45 | |
| 3. Students, Stakeholder and Market Focus | | | **85** |
| 3.1 | Student, Stakeholder, and Market Knowledge | 40 | |
| 3.2 | Student and Stakeholder Relationships and Satisfaction | 45 | |
| 4. Measurement, Analysis and Knowledge Management | | | **90** |
| 4.1 | Measurement, Analysis and Review of Organizational Performance | 45 | |
| 4.2 | Information and Knowledge Management | 45 | |
| 5. Faculty and Staff Focus | | | **85** |
| 5.1 | Work Systems | 35 | |
| 5.2 | Faculty and Staff learning and Motivation | 25 | |
| 5.3 | Faculty and Staff Well-being and satisfaction | 25 | |
| 6. Process Management | | | **85** |
| 6.1 | Learning-Centred Processes | 45 | |
| 6.2 | Support Processes and Organizational Planning | 40 | |
| 7. Organizational Performance Results | | | **450** |
| 7.1 | Student Learning Results | 100 | |
| 7.2 | Student and Stakeholder Focused Results | 70 | |
| 7.3 | Budgetary, Financial and Market Results | 70 | |
| 7.4 | Faculty and Staff Results | 70 | |
| 7.5 | Organizational Effectiveness Results | 70 | |
| 7.6 | Leadership and Social Responsibility Results | 70 | |
| **TOTAL POINTS** | | | **1000** |

"An ISO 9000 certificate for an education and training organization provides "assurance" that it is well organized and that the outcomes of programmes and courses meet the intended goals and needs of the users; however, it does not necessarily guarantee that the content of these courses and programmes meet particular educational standards" (Van den Berghe, 1998). The ISO 9000:2000 is based on a process model that emphasizes continuous improvement. Kartha (2004) lists eight quality principles as envisaged in ISO 9000:2000. These are:

1. *Customer focus*. Organizations depend on their customers and therefore, should understand current and future customer needs, should meet customer requirements, and strive to exceed customer expectations.

2. *Leadership*. Leaders establish unity of purpose and give direction to the organization. Their responsibility is to create an internal environment that can facilitate achievement of the organization's objectives.

3. *Involvement of people*: This principle stresses that people at all levels are the essence of an organization and they should be involved for organizational benefits.

4. *Process approach*. A desired result is achieved more efficiently when activities and related resources are managed as a process.

5. *Systems approach to management*. Identifying, understanding, and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency.

6. *Continuous improvement*. A permanent objective of the organization should be continuous improvement of its performance.

7. *Fact-based decision making*. Useful decisions are based on the analysis of data and information.

8. *Mutually beneficial supplier relationship*. An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

The ISO approved guidelines for the application of ISO 9001: 2000 in education in October 2002 in Acapulco, Mexico in the International Workshop Agreement (IWA 2) that assists educational organizations in providing educational products in conformity with ISO 9001: 2000. It re-affirms, "The quality management system should be the simplest one that works well. It need only be comprehensive enough to meet the quality objectives for the educational organization. Quality control is an essential process in a quality management system. Accurate measurement is not easy when assessing human performance, and appraisal is usually conducted during the educational process" (ISO, 2003). The ISO 9001:2000 for educational institutions has 21 elements in four major sections: Management responsibility, resource management, product realization and measurement, analysis and improvement as shown in Table 12.

The ISO 9001 and 9002 standards are meant for compliance that can be certified by an independent third party (an accreditation body approved by the ISO). Organizations interested in getting the certification contact a certification body and prove their compliance over a period of 6-8 months to the satisfaction of the agency as per the standards.

**Table 12: ISO 9001:2000 for educational organizations**

| |
|---|
| 5. Management responsibility |
| 5.1 Management commitment in the educational organization |
| 5.2 Customer focus in the educational organization |
| 5.3 Quality policy in the educational organization |
| 5.4 Planning |
| 5.5 Responsibility, authority and communication |
| 5.6 Management review in education sector |
| 6. Resource management |
| 6.1 Provision of resources in the educational organization |
| 6.2 Human resources in the educational organization |
| 6.3 Infrastructure in the educational organization |
| 6.4 Work environment in the educational organization |
| 7. Product realization |
| 7.1 Planning of product realization in the educational organization |
| 7.2 Customer-related processes |
| 7.3 Design and/or development |
| 7.4 Purchasing |
| 7.5 Production and service operation |
| 7.6 Control of monitoring and measuring devices in the educational organization |
| 8. Measurement, analysis and improvement |
| 8.1 General guidance in the educational organization |
| 8.2 Monitoring and measurement |
| 8.3 Control of nonconformity products in the educational organization |
| 8.4 Analysis of data in the educational organization8.5 Improvement |

Though, the ISO is a preferred and most popular quality model, it is time consuming and requires high volume of paper work. Van den Berghe (1998) says, "…ISO 9000 norms are not the best imaginable quality standards for education and training. Ideally, they should be complemented by content-related criteria. What remains unresolved as yet is the question of the cost-effectiveness of the certification process and the maintenance of the quality systems". He goes on to recommend that ISO 9000 certification may be considered, if

- the organization is already well organized;
- there is already a quality policy;
- the organization has been, and is likely to remain fairly stable in terms of activities and staff;
- there is a good understanding of all internal processes;

- there is availability of many standardized documents;
- the organization is financially sound;
- a qualified and motivated individual is available to coordinate quality implementation;
- the senior management believes in the value of certification;
- the number of significantly different types of customers, products and services is limited; and
- the organization is small with only few departments and maximum of a few dozen staff members (Van den Berghe, 1998).

If most of the above conditions are met, ISO 9000 can be a safe exercise for any organization.

## 7.3 Capability Maturity Model

The US Air Force funded the Capability Maturity Model (CMM) initially at the Carnegie-Mellon Software Engineering Institute. The CMM was originally intended as a tool to evaluate the ability of government contractors to perform a contracted software project. Though the model is designed for software development, it can be used in other settings as a measure to assess the maturity of the processes. The CMM is based on the concept of 'Key Process Areas' that collectively achieve a set of goals important for enhancing process capability. The CMM believes that mature organizations possess an organization-wide ability for managing objective development and maintenance of processes leading to predictable quality outputs and outcomes. In immature organizations, it is difficult to predict the product quality as they are mostly reactionary (working on *ad hoc* basis) and managers are usually focused on solving immediate crises. The CMM is not prescriptive, but a framework to help software organizations to gain control of their processes for developing and maintaining software for excellence in engineering and management. The CMM recognizes five maturity levels as shown in Fig. 7. Paulk *et al* (1993) defined these levels as follows:

1) *Initial:* The software process is characterized as *ad hoc*, and occasionally even chaotic. Few processes are defined, and success depends on individual efforts.

2) *Repeatable*: Basic project management processes are established to track cost, schedule, and functionality. The necessary process discipline is in place to repeat earlier successes on a project with similar applications.

3) *Defined*: The software process for both management and engineering activities is documented, standardized, and integrated into a standard software process for the organization. All projects use an approved, tailored version of the organization's standard software process for developing and maintaining software.

4) *Managed*: Detailed measures of the software process and product quality are collected. Both the software process and products are quantitatively understood and controlled.

*5)* *Optimizing*: Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

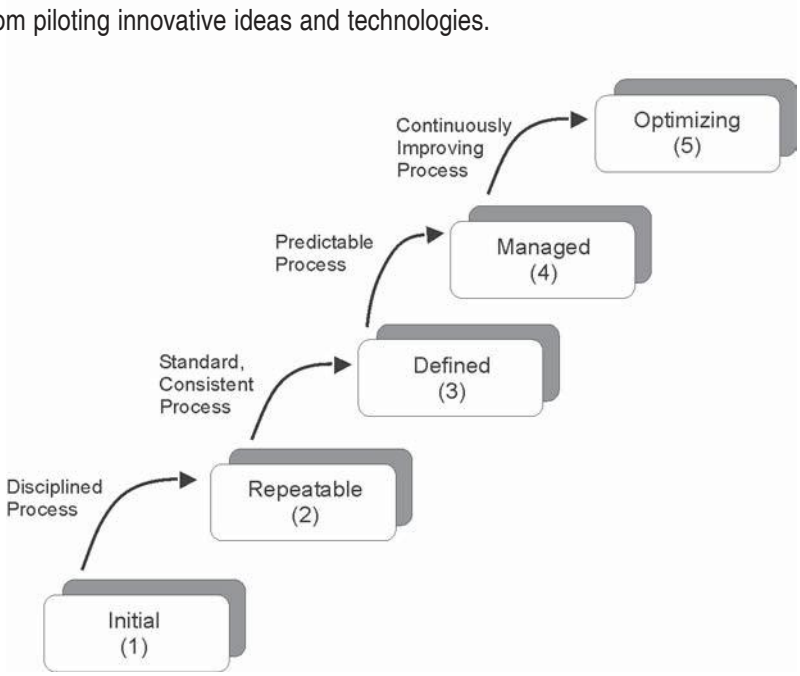


**Fig. 7: Five Levels of Software Process Maturity**

In CMM, the process assessment and capability evaluations are done in six steps:

1. Selection of team members to undertake assessment and evaluation.
2. Administration of maturity questionnaire on representative sample of the site.
3. Analysis of the responses to identify key areas that need explanations.
4. Site visit of the team where team members conduct interviews and review documents to judge whether the goals of key process areas are achieved.
5. Team prepares a list of findings identifying strengths and weaknesses.
6. Team prepares a key process or profile showing where the organization has and has not satisfied the goals of the key process areas.

The CMM has been revised in 2000 and the latest one in use is called Capability Maturity Model integration (CMMI) with emphasis on integration within the organization culture.

## 7.4 Six Sigma

'Six Sigma' as a quality assessment model originated at Motorola in the early 1980s. Since then, it has been used in many business establishments covering General Electric, Ford, Delphi, Texas Instruments, Sony, Polaroid, 3M, and American Express (Goffnett, 2004). Six Sigma is slowly getting into academia as teaching course, and academic institutions are also trying to apply this model for quality assessment and improvement.

Sigma ($\sigma$) is the letter in Greek alphabet used to denote standard deviation in statistics. This essentially forms the basis of Six Sigma. Its main objectives are to reduce variation and defects, increase customer satisfaction and increase profits. Six Sigma can be viewed in three different ways – a metric, a philosophy, and a methodology. As a metric, Six Sigma is a statistical expression that denotes a population's standard deviation and is a measure of variation about mean. At six standard deviation, the defects are at 3.4 per million cases, or 99.9997 percent satisfaction or conformance to standard. This would mean, in an educational institution, at Six Sigma level there would be only 3.4 mistakes in declaration of results of one million student appearances in examinations. Table 13 presents a summary of Sigma level, defects per million and success rate in percentages.

**Table 13: Six Sigma**

| Sigma | Defects per million | Success in percentage |
|---|---|---|
| 6.0 | 3.4 | 99.9997 |
| 5.0 | 233.0 | 99.977 |
| 4.0 | 6210.0 | 99.379 |
| 3.0 | 66807.0 | 93.32 |
| 2.5 | 158655.0 | 84.1 |
| 2.0 | 308538.0 | 69.1 |
| 1.5 | 500000.0 | 50.0 |
| 1.4 | 539828.0 | 46.0 |
| 1.3 | 579620.0 | 42.1 |
| 1.2 | 617911.0 | 38.2 |
| 1.1 | 655422.0 | 34.5 |
| 1.0 | 691462.0 | 30.9 |
| 0.5 | 841345.0 | 15.9 |
| 0.0 | 933193.0 | 6.7 |

Six sigma as a philosophy is concerned with its customer focus and creative process improvements. Six Sigma philosophy believes that there is a strong correlation between level of defects, costs and customer satisfaction. If this is spread across the organization as an inherent philosophy, people work in teams with the ultimate goal of reducing defects and aspire to reach perfection. Six Sigma as a methodology emphasizes the process of achieving the Six Sigma level. The method of Six Sigma is a systematic process covering five steps: Define-Measure-Analyze-Improve-Control. Table 14 describes the activities in each of these steps to achieve the Six Sigma level of quality.

**Table 14: Six Sigma methodology**

| Steps | Activities |
|---|---|
| Define | Select projects, set goals and targets, identify the cost of poor quality, prepare the team, develop process maps |
| Measure | Develop measurement tools, standards and collect data |
| Analyze | Cause and effect diagrams, critical thinking, use statistical tools such as scatter plots, hypothesis testing, analysis of variance |
| Improve | Brainstorm on the cause, and countermeasures, develop solution alternatives, probability of success, cost, time to execute |
| Control | Implement the new initiative and put appropriate control in place to give signal of negative developments |

The concept of Six Sigma and its methodology has a lot of significance to educational institutions. Firstly, it believes in teamwork, which is in tandem with the activities in education. The role and responsibilities of team members in Six Sigma projects are also outlined and involve people who are trained in the process. They are referred as "Black-belt" and Green-belt" holders as in the Karate sport. Thus, in order to implement and achieve a Six Sigma level, an institution needs people who are trained in the methodology of Six Sigma. The curriculum of such training is highly statistical in nature. However, Man (2002) applied the Six Sigma methodology to adult learning and concluded that institutions will benefit a lot even by application of the concept without the statistical part.

## 7.5 Total Quality Management

The total quality management (TQM) has evolved as an overriding concept in the field of quality in recent years. It is a philosophy that subsumes earlier methods of inspection, quality control and quality assurance. TQM assumes that quality is what the consumer of the service/ product perceives. "TQM is a people driven process. It involves changes in people's attitudes primarily. In addition, it deals with process orientation and continuous improvement of the process. It strives for empowerment and autonomy

of the people involved in using production processes. It asks people to continuously look for new ways to adapt to the changing environment. It is a continuous improvement plan, with an effort to bring out the best for the stakeholders as well as for the institution" (NAAC, 2003).

The above definition/explanation of TQM has five components: customer, continuous improvement, training and development, teamwork and measurement.

- The *customer* can be anyone who receives or is affected by the product, process or service, and thus customer can be external or internal.
- For innovation and excellence to come, *continuous improvement* is highly important. Improvement should aim towards 'zero defects'.
- In order to successfully implement TQM, the staff should be open minded and continuously *updated* and *trained*. The focus should be to reinforce employee commitment and have a positive effect on morale leading to productivity gains.
- *Teamwork* and involvement of all stakeholders is key to success.
- The success of TQM implementation is the ability to *monitor* the progress and review the objectives.

For more details about TQM, please refer NAAC publication on "*Total Quality Management for Tertiary Education* (2003).

### 7.5.1 Towards Total Quality Care

One of the contemporary thinkers of higher education and total quality management, Ronald Barnett (1992) says "Quality in higher education demands the establishment of an institutional culture, not so much a matter of total quality management but rather one of total quality care, in which each professional is seized of his or her responsibilities and takes care over all his or her own professional efforts" (p. 133). According to him, quality should be seen as a process of critical dialogue within an institution, where course teams accept ownership and facilitate student engagement towards learning and development, and there is a self-critical culture of continuous care for the students' quality course experience. Barnett suggested that there are four core activities that takes care of quality in higher education: (1) teaching and learning; (2) student assessment; (3) staff development; and (4) curriculum/courses. These form a

'protective belt' to the overall student development and experience that is central to quality higher education. The ideas of Barnett are depicted in Fig. 8. Beyond this, the activities within 'auxiliary belt' are important but have less direct bearing on the quality of student experiences. These are research and publication, institution policy towards access and recruitment, institution's academic development plans, and link with industry, business and the professional community. Within this framework, quality in higher education institutions can be seen both in qualitative and quantitative terms.

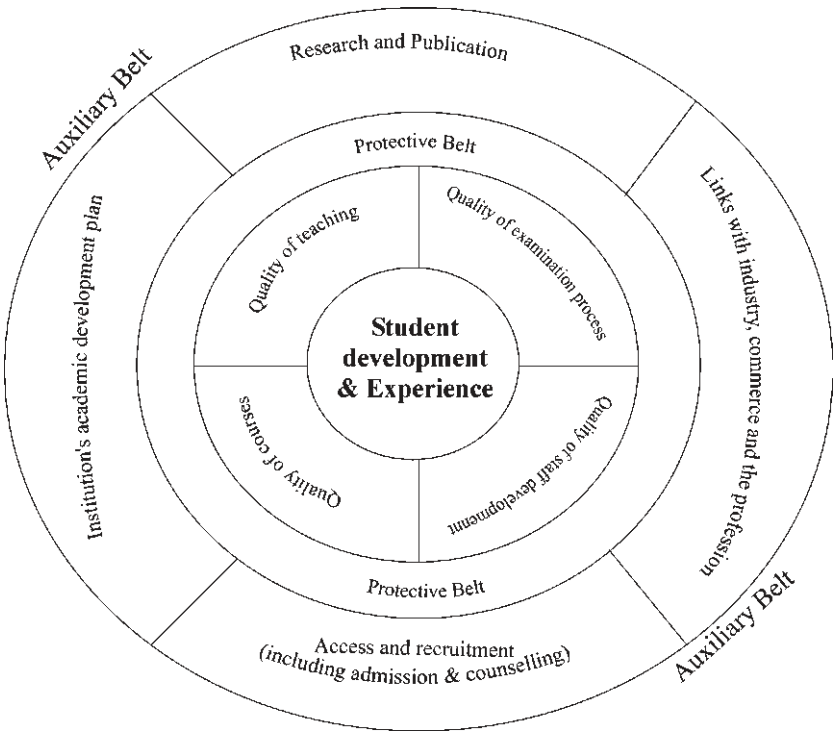


**Fig. 8: Barnett's Quality Framework**

## 7.6 ABET Model

ABET (Accreditation Board for Engineering and Technology) is recognized by CHEA, USA for accreditation of college and university level programs in applied sciences, computing, engineering and technology. ABET was established in 1932 as Engineer's Council for Professional Development (ECPD). Following the tradition of accreditation in the USA, the ABET model follows a voluntary participation by institutions to offer themselves to assess the quality of their programs. An internal self-study evaluation forms the

basis of the beginning of the accreditation process. Based on the self-study report, the appropriate ABET Commission forms an evaluation team for the site visit. Following the visit, the peer-team provides the institution with a written report to allow for correction of errors or misrepresentation of facts. The peer team examines the following in a comprehensive manner and recommend accreditation and relevant action.

- Organization and management of the institution
- Educational programs offered
- Maturity and stability of the institution
- Admission process and number of students enrolled
- Teaching staff and teaching load
- Physical facilities, finances, etc.
- Curricular contents
- Sample student work
- Record of employment of graduates
- Support services to the students
- Clearly stated academic policies

Accreditation is usually granted for a period ranging from 2-6 years. Depending on the weakness of the program, the peer team recommends specific action to be taken by the commission such as: Next General Review (six year); Interim Report and Interim Visit (both 2 years); Report Extended and Visit Extended (2 or 4 years); Show Cause (2 years); Show Cause Extended (2 or 4 years); and Not accredited. For details of these see *ABET Accreditation Policy and Procedures Manual 2006-2007 (*ABET, 2006).

## 7.7 NBA Model

The All India Council for Technical Education (AICTE), India constituted the National Board of Accreditation (NBA) in September 1994, under section 10 (u) of the AICTE Act, 1987 "to periodically conduct evaluation of technical institutions or programmes on the basis of Guidelines, Norms and Standards specified by it and to make recommendations to it, AICTE Council, Commission or other bodies, regarding recognition or de-recognition of the institution or programme". Based on deliberations and consensus among experts,

the NBA has accepted accreditation at the program level as the unit of assessment (post-graduate, graduate and diploma) instead of institution. The accreditation by NBA is categorical: Accredited or Not Accredited. The AICTE recognition is accorded to institutions based on their institutional management, compliance to AICTE Norms and Standards, prior approval by state government and university and market sensitivity of programme output to avoid imbalance in supply of qualified manpower. However, the accreditation by NBA is at the specific program level and ensures that the students admitted to the program undergo an acceptable level of teaching-learning process and are transformed into capable technical professionals, having sound knowledge and personal competence for employment in responsible technical assignments.

The process of accreditation by NBA goes through the following stages:

- Institutions acquire the manual of accreditation and application forms;
- Institution respond to the two part application form (self-study);
- NBA secretariat scrutinizes the request and constitutes the accreditation team;
- Accreditation team visits the institution and makes recommendations (peer team visit);
- The sectoral committee considers the recommendations and the results are placed before the Executive Committee of the AICTE for approval.

These eight criteria are divided differently in a 1000-points scale for different levels of programs. The accreditation is of 'yes' and 'no' type, but the duration of accreditation is of two types – for three years (650-750 score) and for five years (more than 750 score). Thus, in an institution, there could be a programme with 5 years accreditation, another with 3 years accreditation and yet another without accreditation (AICTE, 2004).

The criteria of assessment followed by NBA consist of eight major groups as shown in Table 15.

**Table 15: NBA Criteria for Assessment**

| | |
|---|---|
| 1. Organization and Governance (30/80/50)<br>• Planning and monitoring<br>• Recruitment procedures & their effectiveness<br>• Promotional policies<br>• Leadership<br>• Motivational initiatives<br>• Transparency<br>• Decentralization and delegation & participation by faculty<br>• Constitution of Governing Council / Governing Body<br>2. Financial Resources, Allocation and Utilization (70/70/50)<br>• Budget allocated to institution and utilization (recurring and non-recurring)<br>• Budget allocated to department and utilization (recurring and non-recurring)<br>3. Physical Resources (Central Facilities) (50/50/50)<br>• Student Hostel (Men & Women)<br>• Power back-ups<br>• Reprographic facility<br>• Bank, Post Office<br>• Counselling and guidance; Language lab<br>• Medical facility<br>• Internet facility<br>• Canteen<br>• Transport<br>4. Human Resources (Faculty and Staff) (200/200/200)<br>• Student faculty ratio, experience, turnover<br>• Qualifications<br>• Participation of faculty in development activities<br>• Impact of faculty development initiatives | • Analysis and follow-up for performance appraisal<br>• Service rules, pay package, etc<br>• Number of support staff<br>• Skills of support staff<br>• Skill upgradation of support staff<br>5. Human Resources (Students) (100/100/100)<br>• Student admission<br>• Academic results<br>• Performance in competitive examinations<br>• Placements<br>6. Teaching-Learning Processes (450/350/250)<br>• Delivery of syllabus<br>• Contents beyond syllabus<br>• Academic calendar<br>• Continuous evaluation<br>• Use of equipment, lab<br>• Student-centred learning<br>• Student feedback<br>7. Supplementary Processes (50/50/50)<br>• Extra and Co-curricular activities<br>• Personality development initiatives<br>• Professional society initiatives<br>• Entrepreneurship development<br>• Alumni interaction<br>• Ethics<br>• Student publications<br>8. R&D and Interaction Efforts (50/100/250)<br>• Budget for in-house R&D activities<br>• Sponsored research projects<br>• Publications/ Patents<br>• Industry participation<br>• Continuing education<br>• Consultancy<br>• Student projects |

*Note: Figures in bracket indicate score for Dip./UG/PG*

## 7.8 NAAC Model

In India, the National Assessment and Accreditation Council (NAAC) has identified seven criteria to serve as the basis for the assessment of higher education institutions in the country. Assessment is a voluntary process. However, some State Governments have made it mandatory for their colleges. It follows a four-phase process of assessment of a unit (Institution or Programme/Department) covering:

- Nationally evolved criteria for assessment
- Self study by the institution

- Peer team visit
- Final decision by Executive Committee of NAAC.

*Criteria for Assessment:* NAAC has identified through national consultations and consensus the following seven criteria to serve as the basis for its assessment procedure:

1. Curricular Aspects
2. Teaching-Learning and Evaluation
3. Research, Consultancy and Evaluation
4. Infrastructure and Learning Resources
5. Student Support and Progression
6. Organisation and Management
7. Healthy Practices

The self-study report is expected to highlight the functioning of the institution with reference to these criteria.

*Self Study:* The Institution seeking assessment prepares a self-study report as per the guidelines formulated by NAAC. The report consists of two parts – data about the organisation on various parameters; and a critical self-analysis based on the available data. The self-study is supposed to be a tool for critical reflection on institutional practices and facilities to identify its own strengths and weaknesses. The self-study report enables the NAAC and the peer team to understand the institution better.

*Peer Team Visit:* Based on the self-study report, NAAC constitutes a team of peers in consultation with the institution. The peer team visits the institution and looks for "pattern of evidences" to validate the claims in the self-study report through interaction with the senior management, heads of the departments, teachers, staff and students of the institution. The institution is provided an opportunity for withdrawal at the end by the peer team, before finalizing the draft report. The draft assessment report of the peer team is shared with the institution at the end of the visit. The peer team makes the assessment of the institution based on a suggested scoring pattern. This is submitted to NAAC as a confidential score.

*NAAC Decision*: The Executive Committee of NAAC after reviewing the report takes a decision on the grade of the institution based on the nine-point grading system. Institutions receiving equal or more than

55% receive "Accredited Status" and institutions which do not attain the minimum 55% point for accreditation are intimated that the institution is "Assessed and Found Not Qualified for Accreditation". NAAC grading is valid for a period of 5 years. Institutions that complete five-year accredited period may volunteer for re-accreditation.

The self-study report should conform to the criteria for assessment shown in Table 16. If the inputs from the institution under these criteria are collated, it should give adequate details on all the features of an institution such as its policies, practices, programmes, resources and performance. This would facilitate the institution to appraise itself of its standing besides helping the assessors to make a proper assessment. The NAAC model has many similarities with the Baldrige Criteria for Performance Excellence of the USA. For NAAC, the assessment process is voluntary, and thus, recognizes the willingness of the institution for continuous improvement. It is not a one-time activity, and NAAC recommends every accredited institution to establish an Internal Quality Assurance Cell (IQAC) to sustain the best practices. Thus, the institution is the unit of assessment.

**Table 16: Criteria and key indicators used by NAAC**

**I. Curricular Aspects (150/150/100)**
- Goal Orientation
- Curriculum Development
- Programme Options
- Academic Flexibility
- Feedback Mechanism

**II. Teaching-Learning and Evaluation (250/300/400)**
- Admission Process
- Catering to Diverse Needs
- Teaching-Learning Process
- Teacher Quality
- Evaluation of Teaching
- Evaluation of Learning
- Evaluation Reforms

**III. Research, Consultancy and Extension (150/100/50)**
- Promotion of Research
- Research Output
- Publication Output
- Consultancy
- Extension Activities
- Participation in Extension
- Linkages

**IV. Infrastructure and Learning Resources (150/150/150)**
- Physical Facilities
- Maintenance of Infrastructure
- Library as a Learning Resource
- Computers as Learning Resources
- Other Facilities

**V. Student Support & Progression (100/100/100)**
- Student Profile
- Student Progression
- Student Support
- Student Activities

**VI. Organization Management (100/100/100)**
- Goal Orientation and Decision-Making
- Organisation Structure, Powers and Functions of the Functionaries
- Perspective Planning
- Human power Planning and Recruitment
- Performance Appraisal
- Staff Development Programmes
- Resource Mobilisation
- Finance Management

**VII. Healthy Practices (100/100/100)**
- Total Quality Management
- Innovations
- Value-Based Education
- Social Responsibilities and Citizenship Roles
- Overall Development
- Institutional Ambience and Initiatives

*Note: Figures in brackets indicate score for Universities/Autonomous Colleges/Affiliated Colleges*

## 7.9 ICAR Model

The Indian Council of Agricultural Research (ICAR) established an Accreditation Board (AB) in 1996 to accredit higher education institutions and programmes in different branches of agriculture and allied sciences, including Agricultural Engineering and Veterinary Sciences. For the ICAR-AB, "accreditation is a process of assuring acceptable quality and a tool for improving educational standards" (ICAR, 2002). Accreditation is a three-tier system at ICAR covering university, college and individual programmes and departments. The accreditation process follows a four-step process:

- Institutions submit a detailed self-study report mentioning how the institution meets the criteria of accreditation;
- Peer team visits the institution to examine and validate the self-study report;
- Peer team submits a detailed report with recommendation to the AB; and
- Final decision on the accreditation is taken by the AB.

The peer team recommendations and the outcomes of the accreditation process are in the form of categorical information: full and unconditional accreditation; provisional accreditation with conditions and advice; and denial of accreditation. Re-accreditation is done after an interval of 5-10 years, and the initial accreditation is done only after completion of one batch of students. Though accreditation is criteria-based, no specific score is given, and the AB takes a final view on the status of accreditation based on the peer team report, response of the institution, and review by AB secretariat. The criteria used by ICAR-AB are as follows (ICAR, 2002):

*Criterion 1: The institution has clear and publicly stated objectives consistent with its mission and goals*

*Criterion 2: The institution has organized effectively human, financial and physical resources, necessary to accomplish its objectives.*

*Criterion 3: The institution is accomplishing its educational objectives.*

*Criterion 4: The institution can continue to accomplish its objectives and improve its quality of educational programmes and effectiveness.*

## 7.10 DEC Model

The Distance Education Council (DEC) was established in 1991 under Section 5 (2) of the IGNOU Act (1985), passed by the Parliament of India. It has the mandate to serve as an apex body of Open and Distance Learning (ODL) in India to promote, coordinate and maintain its standards. In pursuance of the function mentioned at (xviii) of Clause 4 (a) of Statute 28 of IGNOU, an Open and Distance Education Assessment and Accreditation Board (ODE-AAB) has been constituted to help students, parents, ODL

institutions, government agencies and employers to identify institutions that meet the norms and standards prescribed by the DEC. The ODE-AAB develops norms, standards and formats for assessment and accreditation; assesses programmes in-depth and recognizes institutions and programmes as outcomes of assessment. It is mandatory for institutions offering programmes through ODL to seek for DEC recognition and apply for assessment (IGNOU, n.d). The process of assessment follows five steps:

- Institutions apply for approval in the prescribed format giving details of the institution and programmes. This is some sort of self-study by the institution.
- Review of learning materials by experts.
- Visit of the expert team to examine the claims made in the application and validate them (peer team visit).
- Report of the expert team to the ODE-AAB of DEC.
- Decision of the Council on recognition.

As outcomes of the assessment process, either an institution is recognized or not recognized. However, provisional recognition may also be given if the Board is convinced that there is enough potential for improvement. As an agency with responsibility also to promote ODL, the DEC takes efforts to improve the quality of the institutions and programmes through developmental grants and conduct of capacity building programmes at the institutional level.

## 7.11 Summary

Quality has been interpreted in different ways in different domains of knowledge. In this section, we discussed five generic models of quality assurance used in education, business and software development. These are Baldrige model, ISO 9000:2000, Capability Maturity Model, Six Sigma, and Total Quality Management. Each one of these is based on a philosophy of its own, and can be applied to education and training situations with minor adjustments.

The specific application models of ABET, NBA, NAAC, ICAR and DEC are variants derived from these models to serve specialized needs in specific contexts. The underlying philosophies of all these models are self-study and external quality monitoring/assessment.

### Reflective Exercise

1. Write a short critique of about 500 words on the different models of quality assurance in higher education.
2. Review the four Indian models of assessment of quality and write a short essay on how these are applied in your own context.

# 8. International Practices

In this section we will look at the practice of quality assurance in major developed countries and also discuss the international cooperation in quality assurance in higher education through establishment of professional associations and networks. In this section, you will see that quality assurance is viewed differently in different countries. Each has its own philosophy and practice, though we can distill some of the common features of self-study and EQM. With different systems of accreditation and educational atmosphere and systems around the world, the need for international and regional cooperation has been realized. This had led to the establishment of regional and international network of quality assurance agencies for mutual understanding and recognition of each other's systems of operation. Apart from helping the national agencies improve their own practice of assessment, these networks develop parity of assessment and ensure credit transfer and mobility of students and mutual recognition of degrees.

## 8.1 United States of America

In the United States, quality assurance in higher education institution is done through the accreditation process, which ensures that education providers meet, and maintain, minimum standards of quality and integrity regarding academics, administration and related services. There is no federal agency or ministry to control or oversee the post-secondary educational institutions in the USA. The accreditation is carried out by private, non-profit organizations designed and recognized for this specific purpose. Thus, external quality monitoring is the method of quality assurance in the USA.

The Commission on Accreditation (COA) founded in 1949 was the first national organization in the USA to develop criteria and recognize accrediting bodies. Thus, the involvement of non-governmental agencies in accreditation has been the norm. In 1974, the COA and the Federation of Regional Accrediting Commission of Higher Education (FRACHE) merged to form the Council on Post-secondary Accreditation (COPA), which served until December 1993 to promote and ensure quality of American post-secondary education. In January 1994, a new entity, the Commission on Recognition of Post-secondary Accreditation (CORPA) was established to continue the task performed by COPA. CORPA was dissolved in April 1997 after the Council for Higher Education Accreditation (CHEA) was created, which is now the agency to carryout the recognition function (USDE, 2005). Thus regional, national and specialized accreditation agencies apply for recognition to CHEA or the US Dept. of Education (USDE). The USDE recognition is required for accreditors whose institutions or programmes seek federal grants and student aid funds.

The CHEA recognition confers an academic legitimacy on accrediting organizations. The CHEA recognition of accrediting organizations is valid for 10 years with five-year interim report, while the USDE recognition review takes place every five years.

The accreditation, in the US is an on-going process. Initial earning of accreditation by an institution is not entitled to indefinite accredited status. By and large there are five key features of the accreditation process:

- *Self-study*: Institutions prepare a written summary of performance based on the standards criteria of the accrediting body;
- *Peer review* is conducted on the self-study report by a group of peers in the profession;
- *Site visit* is organized by the peer team to review the claims made in the self-study report. All team members are volunteers and are generally not compensated;
- *Action by accrediting organization*: The accreditation agency either confers accreditation or denies; and
- *Ongoing external review*: Institutions and programmes continue to be reviewed over time for re-accreditation. This takes place every few years to 10 years. (Eaton, 2000).

The method of accreditation in the USA is similar to what is done in India by NAAC with two differences:

- The accreditation to a programme or institution is either given or denied. There is no grading/ ranking/score attached.
- There are many accrediting bodies (regional, national and specialized (subject specific/professional association)) for accreditation. But, these bodies should seek regular recognition from USDE or CHEA. Thereby a two-tier accreditation system is operational in the USA.

## 8.2 United Kingdom

Established in 1997, the Quality Assurance Agency (QAA) for Higher Education is the centralized independent body funded by subscription from universities and colleges of higher education in the United Kingdom. The QAA's role is to provide public assurance that standards and quality within higher education are being safeguarded and enhanced. The UK Government's white paper – *The future of higher education* - stated that "The QAA has performed an important role in assuring academic quality

and standards in higher education. Through its assessment of teaching in Subject Reviews, it has been instrumental in defining standards for teaching and enabling poor provision to be identified and eliminated" (UKDES, 2003).

In the UK, the quality assurance is done primarily through institutional audit and subject reviews. The institutional audits ensure that higher education institutions are:

- providing awards and qualifications of an acceptable quality and an appropriate academic standard; and
- exercising their legal powers to award degrees in a proper manner (where relevant).

The institutional review will take place in a six-year cycle from 2006. The process of institutional audit is a detailed and comprehensive scrutiny of the internal quality assurance systems of the institution, study of the self-evaluation documents prepared by the institution, and audit visits. The audit team expresses its judgment as 'broad confidence', 'limited confidence', or 'no confidence'. The whole exercise is based on the code of practice for the assurance of academic quality and standards in higher education (QAAHE, 2003). The code has 10 sections:

- postgraduate research programmes
- collaborative provision
- students with disabilities
- external examining
- academic appeals and student complaints on academic matters
- assessment of students
- programme approval, monitoring and review
- career education, information and guidance
- placement learning
- recruitment and admissions

The code of practices sets out guidelines on good practice, and each section has precepts or principles that institutions should satisfy, with guidance on how to meet these principles.

The system of quality assurance in the UK is similar to India in philosophy, though in practice the reporting mechanisms and details in the criteria differ significantly. This is because the contextual environment of quality assurance differs in both the countries.

## 8.3 Australia

Universities and higher education institutions in Australia are self-accrediting bodies. They typically have in place a system of formal, cyclical reviews involving external assessors, for evaluation of programmes and organizational units. The quality assurance process in Australian universities includes:

- Graduate destination surveys and student evaluation surveys;
- Accreditation/approvals from professional associations for courses such as health, medicine, law, etc.; and
- Use of external examiners for higher degrees.

In March 2000, the Ministerial Council on Education, Training and Youth Affairs (MCETYA) formally established the Australian Universities Quality Agency (AUQA) as an independent, not-for-profit national agency to promote, audit, and report on quality assurance in Australian higher education. The objectives of AUQA are to (AUQA, 2005):

- arrange and manage a system of periodic audits of quality assurance relating to the activities of Australian Universities and State and territory higher education accreditation bodies;
- monitor, review, analyze and provide public reports on quality arrangements in higher education institutions in Australia;
- report on the criteria for the accreditation of new universities and non-university higher education courses; and
- report on the relative standards of the Australian higher education system.

The first cycle of audit by AUQA will be completed by 2006. The universities themselves meet the cost of audits. Though the quality assurance process followed by AUQA is based on external quality monitoring,

it does not provide any specific criteria, as each auditee will have systems that are relevant to its own objectives and character. Thus, AUQA accepts an auditee's objective as the starting point. "It is explicitly the responsibility of the auditee to devise a systematic process for evaluating its objectives with respect to criteria which may include relevance, desirability, feasibility, distinctiveness, measurability etc. In order to check its own policies, procedures and practices, to learn whether it is achieving its objectives, and to determine how to improve its performance, an institution or agency must have in place appropriate quantitative and qualitative measures and indicators" (AUQA, 2005, p.10). The EQM process starts with the self-review and submission of a portfolio to AUQA by the auditee institution. AUQA peer team makes site visits to perform external reviews. As part of the peer review, the AUQA team also considers how the institution meets the *National Protocols for Higher Education Approval Processes*. AUQA advises institutions to consider the following in their self-reviews within the context of their quality system:

- What are the objectives of the process?
- How do these objectives relate to the organization's objectives?
- Who has the responsibility for the process? Are others also responsible for various stages in the process?
- How is the process implemented?
- What documentation is required for or associated with the process?
- How is the effectiveness of the process monitored? What indicators are used?
- What is the current state of achievement of the objectives as revealed by the indicators and monitoring?
- What analysis of the strengths and weaknesses of these quality assurance arrangements is performed? What does this indicate about the process effectiveness in activity intended outcomes?
- What plans are in place (or proposals made) for development or improvement? (AUQA, 2005, p.11-12)

It is the responsibility of the institution concerned to take action on the audit report. Since, the report forms the basis of funding by the Commonwealth or the relevant state or territory government, failure to respond appropriately to the reports could lead to reduction on funding.

The system of quality assurance in Australia is quite different to what is practiced in the USA, the UK or for that matter in India. In Australia, EQM or quality audit is performed by AUQA (a central agency) and also by the State and Territorial accreditation bodies. There are no specific criteria for quality assurance, and thus AUQA audits the internal quality assurance process of the auditee institution. The reporting process of the audit review includes 'commendable practices' and 'areas for improvements'. Thus, no grade is given.

So far, we have seen that the USA, the UK and Australia follow different systems of quality assurance in higher education. But all are essentially doing external quality monitoring. In the next part of this section, we will discuss about international agencies in the field of quality assurance.

## 8.4 International Network for Quality Assurance Agencies in Higher Education (INQAAHE)

(http://www.inqaahe.org)

The INQAAHE was established in 1991 to collect and disseminate information on current and developing theory and practice on the assessment, improvement and maintenance of quality in higher education. The objectives of INQAAHE are to:

- promote good practices in the maintenance and improvement of quality in higher education;
- facilitate research into the practice of quality management in higher education and its effectiveness;
- be able to provide advice and expertise to assist the development of new quality assurance agencies;
- facilitate links between accrediting bodies as they operate across national borders;
- assist members to determine the standards of institutions operating across national borders;
- permit better-informed international recognition of qualifications;
- be able to assist in the development and use of credit transfer schemes to enhance the mobility of students between institutions both within and across national borders; and
- enable members to be alert to dubious accrediting practices and organizations.

The INQAAHE shares its views and relevant information through its website (http://www.inqaahe.org); its newsletter 'QA' published every six months; the journal 'Quality in Higher Education' published three times a year; members database; and biennial international conferences.

In April 2005, the INQAAHE general assembly in Wellington, New Zealand agreed on the "INQAAHE Guidelines of Good Practice" which is the result of discussion and consultations involving representatives from over 65 countries. While recognizing the cultural and historical context of external quality assuring agencies in different countries, the *Guidelines of Good Practice* is a document intended to ensure the quality of the agencies (INQAAHE, 2005), and thus, can be considered as meta-accreditation guidelines. The Guidelines of Good Practice are given in Appendix-1.

## 8.5 Asia-Pacific Quality Network (APQN)

(http://www.apqn.org)

The Asia-Pacific Quality Network (APQN)) is a network of quality assurance agencies in the Asia-Pacific region established in Hong Kong in January 2003 and was legally incorporated as an association in Victoria State of Australia in December 2004. Its secretariat is housed at the AUQA office. The objectives of APQN are to:

- promote good practices in the maintenance and improvement of quality in higher education in the Asia-Pacific region;
- facilitate research into the practice of quality management in higher education and its effectiveness in improving the quality of higher education in the region;
- provide advice and expertise to assist the development of new quality assurance agencies in the region;
- facilitate links between quality assurance agencies and acceptance of each others' decisions and judgments;
- assist APQN members in determining standards of institutions operating across national borders;
- permit better-informed international recognition of qualifications throughout the region;
- assist in the development and use of credit transfer programmes to enhance the mobility of students between institutions both within and across national borders;
- enable APQN members to be alert to dubious accrediting practices and organizations; and
- represent the region and promote the interests of the region, where appropriate, eg. vis-a-vis other networks and international organizations.

The mission statement of APQN is "to enhance the quality of higher education in Asia and the Pacific region through strengthening the work of quality assurance agencies and extending the cooperation between them".

With the development grant facility received from the World Bank, the APQN intends to strengthen the institutional capacity of its members. The capacity building measures of APQN have different approaches. "In new small systems such as those in Afghanistan, Bangladesh, Bhutan, Laos, Myanmar and Pakistan, capacity development efforts aim to help the countries establish quality assurance agencies. Representatives from these countries are invited to participate in APQN meetings, and consultancy services to these countries to help establish quality assurance agencies are considered. Countries such as Cambodia, China, Sri Lanka, Thailand and Vietnam – which have emerging quality assurance system – are helped to train their agency staff in good quality assurance practices, and to train the trainers for external reviews. In India, Indonesia and the Philippines – where quality assurance agencies are already functioning – the goal is to introduce reforms and new elements to their practices. This is being done through staff exchanges, workshops and consultancy services" (Stella, 2005).

With UNESCO, Bangkok, APQN is developing a toolkit on quality assurance of cross-border education. APQN plans to see that by 2010 all its full members recognize each other's judgments. This is very important for mobility and credit transfer of students. At present the practices of quality assurance agencies vary a great deal in terms of the methodology (accreditation, audit or assessment), unit of assessment (institution or programme), outcome of assessment (no grading, two-point scale, multi-point scale), and disclosure of the report (confidential or public). Interestingly, all the quality assurance agencies believe in external quality monitoring/assessment within a transparent framework that has a combination of self-study, peer review and site visits. Based on similar characteristics, APQN intends to bring together member countries to agree on mutual recognition of the judgments. As such the APQN will strengthen co-operation in quality assurance in the region.

## 8.6 European Association for Quality Assurance in Higher Education (ENQA)

(http://www.enqa.net)

Quality assurance in higher education within the European Union is an issue of top priority. In 1999, the European Ministers of Education committed to establish the European Higher Education Area by 2010, which is referred as the Bologna Declaration. The Declaration encourages co-operation in quality

assurance of higher education institutions in the European Union to develop comparable criteria and methodologies. It envisages a common system of credit transfer and mobility of students and teachers across European countries.

In the European scenario, quality assurance in higher education uses eight types of evaluation terminologies to reflect the practice (DEI, 2003). These can be depicted in a 4X4 matrix (Table 17).

**Table 17: Types of Evaluation in HEIs in EU**

| | Evaluation | Accreditation | Audit | Benchmarking |
|---|---|---|---|---|
| Subject | | | | |
| Programme | | | | |
| Institution | | | | |
| Theme | | | | |

These terms are defined as follows:

- *Evaluation* is an umbrella term and could cover *evaluation of a subject* (e.g. Chemistry); *evaluation of a programme* (studies leading to a formal degree); *evaluation of an institution*, and *evaluation of a theme* (e.g. ICT or student support).
- *Audit* refers to evaluation of the strength and weaknesses of the quality mechanisms established by an institution itself to continuously monitor and improve the activities and services of a subject, a programme, the whole institution or a theme.
- *Benchmarking* is a comparison of results between subjects, programmes, institution or themes leading to an exchange of experiences of the best practices.
- *Accreditation* is a process of evaluation of a subject/ programme/ institution/ theme as to whether or not it meets the predetermined standard/ criteria.

The operational mechanisms of quality assurance vary a great deal among the European countries. Lee Harvey, a leading expert in quality in higher education says:

> "… Europe is rushing precipitously into accreditation and that the approach being taken is *based on* naive views of what accreditation is and what it can achieve. More fundamentally, there is an underlying but unspecified and unexamined set of taken for-granteds that legitimate accreditation. Accreditation is neither neutral nor benign; it is not apolitical. Quite the contrary,

the accreditation route is highly political and is fundamentally about a shift of power, but a shift conceded behind a new public management ideology cloaked in consumerist demands and European conformity" (Harvey, 2004).

With the Bologna Declaration in the background, the European Network for Quality Assurance in Higher Education was established in 2000. In 2004, the General Assembly of the Network changed its name to the European Association for Quality Assurance in Higher Education (ENQA). At present ENQA has 40 member agencies responsible for quality assurance in higher education in their respective countries. The membership of ENQA is open to agencies in the signatory states of the Bologna Declaration. Some of the European countries have different agencies to monitor quality in university and non-university sectors. ENQA intends to serve the member agencies in the following ways:

- Disseminate information on recent developments in the evaluation of higher education through ENQA website and publication;
- Organize training workshops and provide advisory support;
- Share experiences and good practice in the field of quality assurance in higher education;
- Facilitate contracts to European quality assurance experts;
- Develop a model of peer review of quality assurance agencies in the European Union.

In May 2005, the European Ministers of Education adopted the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" drafted by ENQA. With this the path for setting up mechanisms for peer review of quality assurance agencies has been opened. The standards and guidelines for quality assurance (including evaluation, accreditation and audit) recommends:

- a set of standards for internal and external quality assurance of higher education institutions;
- standards for external quality assurance agencies; and
- a register of quality assurance agencies.

The purpose of the standards and guidelines is to provide a source of assistance and guidance to higher education institutions and quality assurance agencies to develop their own quality assurance systems in a common frame of reference to enable consistency of operational mechanisms and improve the procedures for mutual/multilateral recognition of qualifications (ENQA, 2005). The standard in no way

intends to "dictate practice or be interpreted as prescriptive" as ENQA believes in the principles of good practice in external quality assurance in that:

- the institutional autonomy should be respected;
- the interest of students and other stakeholders such as labour market representatives should be in the fore front of quality assurance processes, and
- use should be made, as much as possible, of the results of institutions' own internal quality assurance activities (ENQA, 2005).

The summary of standards and guidelines are given in Appendix 2.

## 8.7 Washington Accord

Signed in 1989, the Washington Accord is an agreement among the engineering quality assurance organizations of several countries including Australia, Canada, Ireland, Hong Kong, New Zealand, South Africa, Malaysia, Japan, Germany, Korea, Singapore, Taiwan, United Kingdom and the United States of America. The signatories to the Accord recognize that graduate accredited programs in any of the signatory countries be recognized by other countries having met the academic requirements for entry to the practice of engineering. The accord enables the signatory to have comparable criteria, policies and procedures for accrediting engineering programmes. For details on Washington Accord *see* http://www.washingtonaccord.org.

## 8.8 Summary

A variety of accreditation practices are followed all over the world. In the USA, external quality monitoring is done by regional, national and specialized agencies. These agencies in turn are accredited by CHEA and/or the USDE. In the UK, the QAA for higher education does institutional accreditation and subject reviews. The Indian system (NAAC's process) of accreditation is similar to the UK though the details of the criteria are different. As for the stages of accreditation, the NAAC process has similarity with the USA. In Australia, the practice of quality assurance is also EQM. However, it is different from the practices of India, UK and the USA. The AUQA undertakes institutional audit for which there is no specified criteria. But, the process is somewhat similar to the ISO model, and thus, the AUQA reviews the institutional promise and delivery of quality.

In this section, we also discussed the international cooperation and understanding in quality assurance in higher education thorough the efforts of INQAAHE, APQN, ENQA and Washington Accord. Detailed standards and guidelines of good practice of INQAAHE and ENQA are given in the appendices. There are also other specialized agencies for quality assurance in specific subject areas such as Teacher Education and Vocational Education, and you may like to explore these as well.

## Reflective Exercise

1. Identify the similarities and dissimilarities in the quality assurance practices in USA, UK and Australia.

2. Discuss the regional and international cooperation in quality assurance and analyze why it is important for your country to participate in these activities.

# 9. Towards a Culture of Quality

Can quality be managed? To many of us, concept of management as applied in business and industry cannot be applied as such in higher education. According to Pillai (2006) there are limitations in applying the market metaphor to education. According to him the products of education are not really finished products that can be bought off the shelf. The student (customer) competes to get admission and the educational institution (provider) often chooses its customers. Though the customer pays the fees, the output (graduation) is not guaranteed. The student has to play an active role in the process; and behaves more like an entrepreneur (investing time, efforts and money) to produce (acquire) knowledge and skills that are useful in the job market. Thus, quality cannot be managed in the way it is done in business and the industry. In this section we will discuss on 'continuous improvement' and 'culture of quality'. In doing so, we intend to clarify and understand the internal processes of an academic institution and debate its activities in the framework of quality. Thus, looking at 'management *for* quality' rather than 'management *of* quality'.

## 9.1 Managing Higher Education Institutions

*Are higher education institutions different from other organizations?*

Like any other institution, HEIs too have human resources, budgets, infrastructure assets that need to be managed efficiently. When many higher education institutions are facing scarcity of resources, no one would disagree to better and improve quality of management of the non-academic activities leading to creation of an environment conducive for quality academic development. However, the real academic life of a higher education institution is the academic discourses that happen in teaching and research. When it comes to management of this part, many problems arise. Firstly, management as applied in other institutions cannot be applied here. A Principal can suggest something to a teacher, but to accept and apply it in the classroom is within the domain of the teacher. It is difficult to interfere at this level, and to a large extent unethical too. In this context, the lecturer has all the academic freedom and autonomy to perform his/her duties in the best possible manner he/she thinks should be. As such, he/she is accountable to the institution and the society and answerable to the students for his/her action and may be subjected to peer review and student evaluation. In the case of a peer review, as done in assessment exercises, the peer team may sit in a real-teaching class, but it is difficult to make any real judgment in such a situation as that may be designed/ orchestrated. Thus, the academic discourse in a higher

education institution is the backbone of quality that remains within the domain of individual teachers and the student community. The ability of the student community in quality intervention is debatable, although given a proper environment of transparency and openness that is necessary for a quality institution, students can truly make right interventions through questioning and evaluation. In view of this, the management of quality remains a community effort and not necessarily a role of 'senior management' or the 'principal' alone.

NAAC has initiated stakeholder involvement in the process of quality assurance, and has recognized student community as its major stakeholder. NAAC suggests that every HEI should prepare a 'Student Charter' to highlight the rights and obligations of the students. It is believed that such an initiative would help the educational institution to articulate their own obligations to the students and their expectations from them. Quality, thus, is a result of collaborative process, where the provider and the user are aware of their responsibilities and behave in the expected manner. NAAC has issued a 'Model Student Charter' for adoption in the HEIs. It advocates a student participation approach to develop a quality culture within the institution. The students in higher education should be provided with necessary knowledge about quality so that they can demand quality education.

Now, let us look at the seemingly non-academic activity of managing the finance that can have significant impact on the academic activity. For example, reduction in the budgets for procurement of books and journals will have demonstrable negative effect on the quality of teaching and research. However, as we see in the HEIs, the decisions are more or less a participatory one, where the involvement of academics as members of various committees reflects the legitimacy of the managerial decision-making. In the universities, the academic council is the supreme body and determines the standards with regard to quality of its academic programmes. The academic council is a system of collegial decision-making, with again the responsibility of quality remaining with the community.

Thus, the main activities of HEIs — teaching, scholarship and research — are not managed by senior personnel in the sense of being directed or controlled, rather the management of these activities is a community exercise performed by individuals in context. The collegial model of decision-making, continuous debate and discourse in HEIs need leaders who are imaginative and lead by example. They should be able to provide right conditions, assistance and incentives to employees at all levels by setting guidelines, procedures and systems in place to have a positive effect on the quality of the work of the academics. The control, ownership and authorship of what happens in the classroom remains with the teachers and thus, the responsibility for quality also remains with them. In this context, the roles

of the leader is to sell the idea of quality to all the teachers in such a way that they take 'ownership' and commit themselves to the new initiative. Therefore, the concept of continuous improvement is highly significant. We will discuss this in the next sub-section.

## 9.2 Continuous Improvement

The Japanese call it *Kaizen,* which means incremental improvements of the on-going processes. It is a philosophy to improve the quality of goods and services of an organization. As we know in general, everything deteriorates with time and use. Continuous improvement is an intervention to stop this and increase the quality. The process of continuous improvement is known as Deming's P-D-C-A cycle. The four original major steps of the cycle are:

1. P (plan) – gathering of data to identify and define the issue(s)/problem(s) that need improvements and identify ways to achieve them.

2. D (do) – implementing the plan by using a trial run, a test group, etc.

3. C (check) – analysing the results to see if there is good agreement between the original goals and what was actually achieved; make adjustments if necessary.

4. A (act) – depending on the results from the check step, acting on the plan on a full scale or conducting further work by beginning with the P (plan) (Temponi, 2005).

In his later work, Deming replaced 'Check' with 'Study' because he wanted to emphasize the process of learning as more important than the limited action of checking –inspection (Neave, 1990). Thus, the P-D-C-A cycle is also called P-D-S-A cycle.

The major underlying principle here is self-assessment, and thus, this is a right fit for the academic institution. Also the P-D-S-A is in line with all models of quality assurance including NAAC's core values and seven criteria. We can apply the P-D-S-A cycle to all our academic activities including classroom teaching.

### 9.2.1 Internal Quality Assurance Cell

The continuous improvement process is future directed and believes in a 'transformation' model to a 'revolution' model. The process expects commitment from all involved parties and also recommends empowerment of the participants, which is possible through regular staff development activities. In

India, NAAC proposes that every accredited institution should establish the Internal Quality Assurance Cell (IQAC) to continuously improve quality as 'enhancement' and sustain the good work of the institution. IQAC will facilitate the process of internalization of the quality and play a catalytic role in performance improvement of the institution. All the accredited institutions with IQAC are expected to submit annual quality assurance reports to NAAC as self-reviewed progress reports. IQAC will create internal awareness on quality issues and also establish credibility for the external quality evaluation. Training and development on 'quality' as well as other functional competencies of academic and non-academic staff are crucial to continuous improvement and development of a 'culture of quality'. Instruments for assessing quality culture are available that can be used to understand how quality is a part of our organizational culture (*see* West-Burnham, 1992; Lewis & Smith, 1994). A quality organization is one that has a 'culture of quality' meaning quality is its hallmark in whatever it does. This includes: its mission and goals that are focused towards the customers (students), its activities and processes are standardized (there are documented practices, which can reply to what, why and how), and it satisfies the needs of the stakeholders (society, employers) and goes beyond to create 'customer delight'.

## 9.3 Open, Distance and Online Learning

Due to technological advancements, higher education is not only available through face-to-face conventional mode, but also available through distance education and e-learning modes. There are many variants of educational provisions (Stella & Gnanam, 2004):

- Distance education
- Twinning arrangements
- Study abroad semesters
- Branch or satellite campuses set up in other countries
- Sale of courseware
- Franchised operations
- Partnership arrangements
- Corporate universities
- Virtual universities

Of these, the distance education provision is predominant with the virtual or the e-learning option gaining momentum due to availability of computers and the Internet. Today, it is possible for students to take a part of the program through e-learning mode staying in the campus or away from it. Distance education is also seen as a means of acquiring additional skills and qualifications in this age of competition. It is important to assure the quality of these alternative forms of delivery of education, otherwise parity of courses and programs will be lost and distance education and e-learning programs would be criticized on account of poor quality. According to V.S. Prasad (2006) "Distance education, which is considered an important solution to meet the demands for mass education in developing countries, without quality may instead become a big problem" (p.343). Distance education institutions are conscious of this fact and undertake many steps for quality assurance (Tait, 1993) such as:

- Course team approach in development of lessons as a non-hierarchical team work and re-work on draft materials;
- Developmental testing of course materials before general availability;
- Monitoring of correspondence teaching (student assignments);
- Monitoring of assignment turn around time by tutors;
- Inspection and support of tutorial and counseling staff;
- Regular collection of feedback from students.

In open and distance learning (ODL) most of the times, good learning materials are considered as benchmark for quality education. But, a learning experience is more than just good learning material. Excellent materials are useless if not delivered to students on time. Robinson (1995) suggests a framework to manage quality in ODL:

- *Product*: the learning materials and courses, media materials, the outputs (number of graduates, pass rate, performance of competencies);
- *Services*: registration and advisory services, tutoring and counseling, feedback and guidance of learning, support for progress as a learner, career advise, provision and management of study centers;
- *Processes* that support both of the above: delivery systems, record keeping, scheduling, warehousing and stock control, quality assurance procedures;
- *General philosophy:* policy and mission statements, ethos and culture of the organization, attitude of staff and their commitment, etc.

A recent study on innovative and good practice of ODL in Asia and the Pacific revealed that many ODL institutions have implemented quality assurance measures through their practices. Reviewing the centralized model of quality assurance of ODL in India by the Distance Education Council (DEC), the study suggests that other countries may follow it as a useful benchmark (Jung, 2005). The assessment criteria followed by DEC is similar to that of NAAC. The distance education guidelines of the QAA for higher education argue that distance education quality needs to be assured in the same way as any other forms of higher education (QAAHE, 1999). In a recent publication, Koul (2006) identified ten factors grouped into three dimensions that contribute to quality assurance in ODL. These are given in Table 18.

**Table 18: Factors contributing to quality of ODL**

| Dimensions | Factors |
|---|---|
| Core dimension | 1. Course materials, instructional design, teaching-learning including evaluation practices, and learner support services<br>2. Learner centricity of support services; and research and capacity building. |
| Systemic dimension | 3. Role of State in introducing, promoting and sustaining quality assurance regimes<br>4. Institutional leadership<br>5. Institutional commitment manifested through objects, practices and attitudes<br>6. Innovative management involving decentralized programme management, appropriate technology use and participatory decision-making<br>7. Quality of long- as well as short-term plans<br>8. Integrated quality assurance mechanisms within institutional processes |
| Resource dimension | 9. Use of contemporary ICTs<br>10. Role and importance of academic fraternity in taking multiple responsibilities and innovative approaches |

E-learning or online learning is a new and emerging form of distance education (Mishra, 2001) that makes available both synchronous and asynchronous learning opportunities to the students. However, the quality of e-courses is often criticized as static web pages lacking design, and is posted as lecture notes (Weigel, 2000; Car-Chellman and Duchastel, 2000). There is also an erroneous belief that the availability of information on the web through a search engine can replace quality learning. Good learning is not just information, but it is 'Information Plus' (Mishra, 2002). The Institute of Higher Education Policy (IHEP), USA based on a comprehensive study identified 24 benchmarks for quality e-learning categorized into seven groups (IHEP, 2000):

- Institutional support
- Course development
- Teaching and learning
- Course structure
- Student support
- Faculty support
- Evaluation and assessment

Thus, quality is an overriding principle for all forms of education – face-to-face, distance and online, and higher education institutions should consider assuring all round quality in order to develop a culture of quality.

## 9.4 Summary

Managing quality in higher education institution is not similar to business and industry. Thus, in this section, we emphasized 'management *for* quality' rather than 'management *of* quality'. Higher education institutions work as a community that takes decision to maintain standards and quality. The educational process is also based on community collaborative learning, where the students have to play an active role be it in teaching or research in HEIs. Thus, the concept of continuous improvement is most suitable to HEIs. The Deming P-D-S-A cycle for continuous improvement is based on self-evaluation, which can be applied to educational endeavours at individual teacher level as well as institutional level.

In this section, we also emphasized the role of a student as stakeholder in the process of quality assurance, and the role of IQAC to develop a 'quality culture' in HEIs. The growing availability of alternate forms of higher education as distance and e-learning also demand that quality is maintained and assured in all forms of education provided by HEIs.

### Reflective Exercise

1. Do you think quality can be managed in your institution? Explain how you will take care of quality in your institution.

2. What according to you should be the determining factors of quality in ODL institutions to maintain parity of educational programmes?

# 10. Conclusion

In this module, we discussed various issues related to understanding of quality assurance in higher education. Higher education is at the cross roads. At one end there is high demand for access to higher education, and at the other the quality is questioned. In order to survive in the competitive world of globalization, all higher education institutions should pay special attention to quality in higher education. NAAC has taken a number of steps to promote the quality of Indian higher education. To this effect, it undertakes assessment exercises through self-assessment, peer review and site visits. This module also intends to prepare better-trained individuals on quality in higher education.

In this module, we defined quality as a social construct that can be defined

- in terms of *exceptional* (exceeding high standards and passing a required standard);
- in terms of *consistency* (exhibited through "zero defects" and "getting right the first time", making quality a culture);
- as *fitness for purpose* (meaning the product or service meets the stated purpose, customer specifications and satisfaction);
- as *value* for money (through efficiency and effectiveness); and
- as *transformative* (in terms of qualitative change).

The history of quality movement in the industry was discussed and the contributions of Deming, Juran and Crosby were analyzed to provide insights into the conceptual developments from quality inspection to total quality management. We discussed quality from three different perspectives – Product (output of the educational institution), Software (processes in the educational institution), and Service (the activities that have direct impact on student satisfaction). In doing so, we discussed quality in the systems perspective and identified three different aspects of quality – input, processes and outputs. Having analyzed various aspects of quality, we discussed various ways of quality assurance that include self-evaluation, best practice benchmarking and external quality monitoring. The external quality monitoring is the most popular means of quality assurance, though self-evaluation is normally in-built in the process. In order to do self-evaluation and external quality monitoring, we need several tools of quality assurance.

Some of the tools discussed for quality assurance are: process flowchart, graphs, pareto analysis, fishbone diagram, scatter diagram, check sheets and control charts.

There are various models of quality assurance available. Different countries adopt different models for quality assurance. We discussed five generic models in this module. These are: the Baldrige Criteria, ISO 9000:2000, Capability Maturity Model, Six Sigma, and Total Quality Management. Based on these models various countries and institutions develop their own systems for quality assurance. In this module, we discussed the quality assurance systems and processes in USA, UK and Australia. You will recall that these three countries follow external quality monitoring systems as in India. However, there are many similarities and dissimilarities. We also discussed international efforts like – INQAAHE, APQN, ENQA and Washington Accord that intend to facilitate the process of mutual recognition of different systems by member countries.

At the end, we critically examined quality assurance in the academic system, and recommended that continuous improvement should be the *mantra* of quality assurance. In the process the student as the key stakeholder of the system was identified, and the role of Internal Quality Assurance Cell (IQAC) in improving quality and developing a culture of quality was highlighted. We also highlighted the emerging trends of open, distance and online learning and how quality issues in these variant forms of delivery of higher education are addressed. While we identified key areas, these have not been dealt with in-depth due to constraints of space, and interested readers are recommended to follow the references here in. Some of the key terms in this module are given in the glossary for your easy reference. However, it would be useful to recall the relationships of the key terms used through out this module before we end this discussion:

1. Quality inspection is performed for quality control.

2. Quality assessment and quality evaluation are used interchangeably, though the former can be attributed to the process and the latter to the end product. Combinedly it is also referred to as quality audit.

3. The outcome of quality assessment/evaluation is accreditation.

4. Accreditation is the certification of an institution or its department for a particular period of time in terms of a threshold standard.

5. Standards are measures for assessment of quality, and indicate the presence or absence of quality. Standards are performance indicators. But not all performance indicators are standards.

6. Benchmark is a comparative standard that every organization strives to achieve.

7. Quality assurance system leads to performance excellence and total quality management. Assuring quality is a continuous teamwork in which standards, benchmarks, and quality audit play a significant integrated role. Quality assurance has to be implemented internally though it is normally monitored/ assessed through external agency for accreditation.

Having read this document and done the 'Reflective Exercises', I am sure you will agree with us that "Quality assurance is not the destination, but a journey to continuously improve".

# Glossary

*In this section, we define and explain the key concepts in quality as a recapitulation of what has been discussed in this module.*

**Accreditation** assures the educational community, the general public, and other agencies or organizations that an institution or programme (a) has clearly defined and educationally appropriate objectives, (b) maintains conditions under which their achievement can reasonably be expected, (c) is in fact accomplishing them substantially, and (d) can be expected to continue to do so (Chernay, 1990). This is the North-American definition of accreditation. In many other countries, accreditation would imply that at least a threshold standard is intended and achieved by the accredited institutions. In India, accreditation is taken to mean the certification awarded by an approved agency. According to NAAC, accreditation is "certification of assessment given by NAAC which is valid for a stated period of time and the recognition accorded to an institution that meets standards or satisfies criteria laid down by a competent agency".

**Assessment** according to NAAC is "a process of evaluation of performance of an institution of higher learning or its unit, based on certain established criteria".

**Benchmarking**: A tool used to improve products, services or management processes by analyzing the best practices of other organizations to determine standards of performance and how to achieve them in order to increase customer satisfaction (Lewis & Smith, 1994).

**Criteria** mean a set of "pre-determined standards for the functioning of an institution of higher education that form the basis of assessment and accreditation".

**Performance Excellence**: The term "performance excellence" refers to an integrated approach to organizational performance management that results in (i) delivery of ever-improving value to students and stakeholders, contributing to improved education quality and student learning; (ii) improvement of overall organizational effectiveness and capabilities; and (iii) organizational and personal learning (NIST, 2005).

**Performance Indicators** are used by operational units, schools and departments to demonstrate the extent to which programmes are achieving the desired results.

**Quality Assessment** refers to a number of measures of effectiveness and efficiency as defined by various stakeholders in education and the representatives of the academic establishment.

**Quality Assurance** refers to the process of maintaining standards reliably and consistently by applying criteria of success in a course, programme or institution. Quality Assurance can be defined in terms of its four components:

1. everyone in the enterprise has a responsibility for enhancing the quality of the product or service;
2. everyone in the enterprise has a responsibility for *maintaining* the quality of the product or service;
3. everyone in the enterprise understands, uses and feels *ownership* of the systems which are in place for maintaining and enhancing quality; and
4. management regularly checks the validity of the system for checking quality (Frazer, 1992).

**Quality Audit** is concerned with processes and procedures. It is the "systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives" (BIS, 1988).

**Quality Control** is the process of checking whether a product or service is meeting a minimum standard. It is a necessary but not sufficient condition for any institution to be successful.

**Quality Evaluation** may refer to the assessment of quality to enable institutions and faculty to appropriately value the academic programme.

**Quality Inspection** is the process of inspecting the products or services for quality control.

**Standards** are formally documented requirements and specifications against which performance can be assessed. Standards as a term can be used in quality assessment in the sense of a measure of processes, performances and outcomes that can be quantified or assessed on a continuum (Ashcroft & Foreman-Peck, 1996).

**Total Quality Management** is the application of quality principles to achieve the integration of all functions and processes of the organization. The ultimate goal is customer satisfaction. The way to achieve it is through continuous improvement. The creative involvement of everyone, from the chief executive down, in the continuous improvement of the organization's processes, products and services (Liston, 1999).

# Web Links

1. Accreditation Board for Engineering and Technology, USA http://www.abet.org/
2. All India Council for Technical Education, India http://www.aicte.ernet.in/
3. American Society for Quality http://www.asq.org/
4. Asia-Pacific Quality Network http://www.apqn.org/
5. Australian Universities Quality Agency http://www.auqa.edu.au/
6. Baldrige National Quality Program http://www.quality.nist.gov/
7. British Standards Institution http://www.bsi-global.com/index.xalter
8. Bureau of Indian Standards http://www.bis.org.in/
9. Commonwealth of Learning, Canada http://www.col.org
10. Council for Higher Education Accreditation, USA http://www.chea.org/
11. Distance Education Council, India http://www.dec.ac.in
12. European Association for Quality Assurance in Higher Education http://www.enqa.eu/
13. European Organization for Quality http://www.eoq.org/start.asp
14. Indian Council for Agricultural Research, India http://www.icar.org.in/
15. Institute of Quality Assurance, UK http://www.iqa.org/
16. International Network for Quality Assurance Agencies in Higher Education http://www.inqaahe.org/
17. International Organization for Standardization http://www.iso.org/iso/en/ISOOnline.frontpage
18. Juran Institute http://www.juran.com/
19. National Assessment and Accreditation Council, India http://www.naac-india.com/ & http://www.naacindia.org
20. National Council for Accreditation of Teacher Education, USA http://www.ncate.org/
21. National Council for Teacher Education, India http://www.ncte-in.org/
22. Philip Crosby Associates http://www.philipcrosby.com/
23. Quality Assurance Agency for Higher Education http://www.qaa.ac.uk/
24. Quality Council of India http://www.qcin.org/
25. The Higher Education Academy, UK http://www.heacademy.ac.uk/accreditedprogrammes.htm
26. The W. Edwards Deming Institute http://www.deming.org/
27. Times Higher Education Supplement http://www.thes.co.uk/
28. Washington Accord http://www.washingtonaccord.org/

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# APPENDIX 1: INQAAHE Good Practice Guidelines

## GUIDELINES OF GOOD PRACTICE

(Agreed by the INQAAHE General Assembly in Wellington, New Zealand in April, 2005)

## THE BASIC CONDITIONS FOR THE GUIDELINES OF GOOD PRACTICE

When reading and working with the Guidelines of Good Practice the following should be taken into consideration:

– The Guidelines are intended to promote good practice and assist an External Quality Assurance (EQA) Agency in improving its quality building on existing experiences.

– That each EQA Agency has evolved to serve a specific context and that this is influenced by its cultural and historical context.

– That there exists a diversity of approaches to, and purposes for, external quality evaluation (e.g. but not restricted to accreditation, assessment and audit), but that these approaches can be underpinned by some common agreed principles. (The words 'evaluation' or 'EQA' will be used as generic terms to include all types of external quality checking.)

– The Guidelines should not lead to the dominance of one specific view or approach, but promote good practices, while helping to eradicate bad quality.

## THE GUIDELINES OF GOOD PRACTICE

### 1. The Mission statement

The EQA Agency has a written mission statement or set of objectives that takes into account the cultural and historical context of the agency. The statement makes clear that external quality assurance is a major activity of the agency, and that there exists a systematic approach to achieving the mission or objectives. There is evidence that the mission statement is translated into a clear policy or management plan.

*Examples of sources of evidence:*

- Mission statement.
- Policy/strategy of the agency.
- Management plan.
- Legislation.

### 2. The relation between the EQA Agency and the higher education institutions

The EQA Agency:

- Recognises that quality and quality assurance are primarily the responsibility of the higher education institutions themselves.

- Respects the autonomy, identity and integrity of the institution.
- Applies standards, which have been subject to consultation with stakeholders.
- Aims to contribute to both quality improvement and accountability.

*Examples of sources of evidence:*

- Policies/manuals.
- Feedback from institutions and other stakeholders.
- Reports from external reviews of the EQA Agency.
- EQA Agency self reviews.

## 3. Decision-making

The EQA Agency carries out its evaluations in relation to both the higher education institution's own self-assessment and to external reference points. An EQA agency is independent to the extent that it has autonomous responsibility for its operations and that the judgments made in its reports cannot be influenced by third parties. The agency evinces independent, impartial, rigorous, thorough, fair and consistent decision-making. The agency makes consistent decisions, even if the judgements are formed by different groups, panels, teams or committees.

*Examples of sources of evidence:*

- Manuals including instructions for experts.
- Criteria for the selection, appointment and training of experts.
- Legal frameworks, procedures, forms, documents, e.g. Codes of Ethics used to avoid conflicts of interest.
- Assessment frameworks and criteria.

## 4. The external committee

Where the EQA Agency uses external panels, teams or committees to carry out the evaluations, the system clearly ensures that:

- The composition of the committee is in accordance with the guidelines applied by the EQA Agency and adequate for the tasks to be accomplished.
- There are no conflicts of interest.
- The committee is instructed clearly about the task.
- The committee acts independently when making its judgements, conclusions or recommendations.

*Examples of sources of evidence:*

- Procedures for nomination and appointment of experts, including the criteria applied.
- Methods of and material used for briefing and training of experts.
- Description of division of labour between the agency staff and the external panel/team/committee.

## 5. The Public Face

In its work, the EQA Agency informs and responds to the public in accordance with the legislation or cultural context relating to the agency. This includes making public and explicit its documentation e.g. policies, procedures and criteria.

The agency also demonstrates public accountability by reporting openly on its review decisions and making the outcomes of the evaluation public in a way appropriate to the relevant country legislation and the type of review undertaken. The content of the public report may differ depending on the cultural context and will also depend on the requirements set for accountability.

*Examples of sources of evidence:*

- URL address to EQA Agency website and short summary of the types of information provided here.
- List of publications.
- Press releases.
- Other ways and means of informing the public e.g. email service, Newsletter.

## 6. Documentation

The EQA Agency has clear documentation concerning the self-evaluation and the external evaluation and:

- The documentation concerning the self-evaluation indicates to the institutions of higher education the purposes, procedures and expectations of content in connection with the self-evaluation process. The documentation should distinguish clearly between recommendations and requirements.
- The documentation for external evaluation sets out the matters covered in these Guidelines of Good Practice, such as the standards used, the decision criteria, the assessment methods, the reporting format etc. If the external evaluation leads to an accreditation, the accreditation framework and standards are public and the criteria for accreditation clearly formulated. The rules leading to an accreditation decision are transparent, public and guarantee equality of treatment.
- The documents indicate clearly what the EQA Agency expects from the institution. Those expectations are appropriate for an institution of HE or its core activities.
- The documents for EQA present clearly that the framework will assure that each institution or part of it (e.g. subject area) will be evaluated in an equivalent way, even if the external review panels are different.

*Examples of sources of evidence:*

- Manuals or guidelines including instructions for experts and/or institutions.
- Protocols.
- Evaluation frameworks.
- Proof of adherence to internationally accepted guidelines and conventions.

## 7. Resources

The EQA Agency has adequate and accessible resources, both human and financial, to be able to organise and run the process of external evaluation, in an effective and efficient manner in accordance with the mission statement and the chosen methodological approach and with appropriate provision for development.

*Examples of sources of evidence:*

- Budget.
- Accounts.
- Activities, tasks, workloads.
- Fee structure.
- Fees for experts.
- Average cost of external review.
- Human resources profile. (Board, or equivalent/external committee members/staff in terms of numbers and qualifications.)

## 8. System of Appeal

The EQA Agency has an appropriate method for appeals against its decisions.

*Examples of sources of evidence:*

- Policy and procedures of appeal.
- Statistics over a five-year period, including e.g. the number of appeals, number of appeals granted and denied.

## 9. Quality Assurance of the EQA Agency

The EQA Agency has a system of continuous quality assurance of its own activities, emphasising flexibility (in response to the changing nature of higher education) and quality improvements.

The agency carries out self-review of its activities, e.g. based on data collected and analysis, including consideration of its own effects and value. The agency is subject to external reviews at regular intervals, and there is evidence that the results are used.

*Examples of sources of evidence:*

- Quality assurance policy/system/activities/plan.
- Former self reviews.
- Reports from external reviews.
- Examples of follow-up activities to the continuous quality assurance activities.
- Internal feedback (Board or equivalent/external committee/staff).
- External feedback from institutions or other stakeholders.

## 10. Collaboration with other agencies

As far as possible, the EQA Agency collaborates with other EQA Agencies, eg. about the exchange of good practice, review decisions, providers of transnational education, joint projects, staff exchanges.

*Examples of sources of evidence:*

- Account of meetings and visits to and from other agencies.
- Staff exchanges.
- Written contact between agencies on the solution for specific issues.
- Participation in projects, conferences and workshops.
- Membership of networks/organisations.

# APPENDIX 2: ENQA Standards and Guidelines

## EUROPEAN STANDARDS FOR QUALITY ASSURANCE

The standards are in three parts covering internal quality assurance of higher education institutions, external quality assurance of higher education, and quality assurance of external quality assurance agencies.

### Part 1: European standards and guidelines for internal quality assurance within higher education institutions

**1.1** Policy and procedures for quality assurance: Institutions should have a policy and associated procedures for the assurance of the quality and standards of their programmes and awards. They should also commit themselves explicitly to the development of a culture, which recognises the importance of quality, and quality assurance, in their work. To achieve this, institutions should develop and implement a strategy for the continuous enhancement of quality. The strategy, policy and procedures should have a formal status and be publicly available. They should also include a role for students and other stakeholders.

**1.2** Approval, monitoring and periodic review of programmes and awards: Institutions should have formal mechanisms for the approval, periodic review and monitoring of their programmes and awards.

**1.3** Assessment of students: Students should be assessed using published criteria, regulations and procedures, which are applied consistently.

**1.4** Quality assurance of teaching staff: Institutions should have ways of satisfying themselves that staffs involved with the teaching of students are qualified and competent to do so. They should be available to those undertaking external reviews, and commented upon in reports.

**1.5** Learning resources and student support: Institutions should ensure that the resources available for the support of student learning are adequate and appropriate for each programme offered.

**1.6** Information systems: Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes of study and other activities.

**1.7** Public information: Institutions should regularly publish up to date, impartial and objective information, both quantitative and qualitative, about the programmes and awards they are offering.

### Part 2: European standards for the external quality assurance of higher education

**2.1** Use of internal quality assurance procedures: External quality assurance procedures should take into account the effectiveness of the internal quality assurance processes described in Part 1 of the European Standards and Guidelines.

**2.2** Development of external quality assurance processes: The aims and objectives of quality assurance processes should be determined before the processes themselves are developed, by all those responsible (including higher education institutions) and should be published with a description of the procedures to be used.

**2.3** Criteria for decisions: Any formal decisions made as a result of an external quality assurance activity should be based on explicit published criteria that are applied consistently.

**2.4** Processes fit for purpose: All external quality assurance processes should be designed specifically to ensure their fitness to achieve their aims and objectives.

**2.5** Reporting: Reports should be published and should be written in a style, which is clear and readily accessible to its intended readership. Any decisions, commendations or recommendations contained in reports should be easy for a reader to find.

**2.6** Follow-up procedures: Quality assurance processes which contain recommendations for action or which require a subsequent action plan, should have a predetermined follow-up procedure, which is implemented consistently.

**2.7** Periodic reviews: External quality assurance of institutions and/or programmes should be undertaken on a cyclical basis. The length of the cycle and the review procedures to be used should be clearly defined and published in advance.

**2.8** System-wide analyses: Quality assurance agencies should produce from time to time summary reports describing and analysing the general findings of their reviews, evaluations, assessments etc.

## Part 3: European standards for external quality assurance agencies

**3.1** Use of external quality assurance procedures for higher education: The external quality assurance of agencies should take into account the presence and effectiveness of the external quality assurance processes described in Part 2 of the European Standards and Guidelines.

**3.2** Official status: Agencies should be formally recognised by competent public authorities in the European Higher Education Area as agencies with responsibilities for external quality assurance and should have an established legal basis. They should comply with any requirements of the legislative jurisdictions within which they operate.

**3.3** Activities: Agencies should undertake external quality assurance activities (at institutional or programme level) on a regular basis.

**3.4** Resources: Agencies should have adequate and proportional resources, both human and financial, to enable them to organise and run their external quality assurance process (es) in an effective and efficient manner, with appropriate provision for the development of their processes and procedures.

**3.5** Mission statement: Agencies should have clear and explicit goals and objectives for their work, contained in a publicly available statement.

**3.6** Independence: Agencies should be independent to the extent they have autonomous responsibility for their operations and the conclusions and recommendations made in their reports cannot be influenced by third parties such as higher education institutions, ministries or other stakeholders.

**3.7** External quality assurance criteria and processes used by the agencies: The processes, criteria and procedures used by agencies should be pre-defined and publicly available. These processes will normally be expected to include:

- a self-assessment or equivalent procedure by the subject of the quality assurance process;
- an external assessment by a group of experts, including, as appropriate, (a) student member(s), and site visits as decided by the agency;
- publication of a report, including any decisions, recommendations or other formal outcomes;
- a follow-up procedure to review actions taken by the subject of the quality assurance process in the light of any recommendations contained in the report.

**3.8** Accountability procedures: Agencies should have in place procedures for their own accountability.

## Quality Assurance in Higher Education: An Introduction

# Feedback Form

1. Rate (please tick ✓) the following statements using the five-point scale given below and comment on your rating to justify.

**SA**= Strongly Agree **A**= Agree **U**= Undecided **D**= Disagree **SD**= Strongly Disagree

| Statements | SA | A | U | D | SD |
|---|---|---|---|---|---|
| The objectives/ learning outcomes set in the module are congruent with the needs of the target groups | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| The module contents are organized in an helpful sequence | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| The concepts and ideas discussed are relevant and practical | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| The activities/ reflective exercises given are appropriate | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| The module is written in a readable language and style | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| The module met my expectations | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| I can apply the strategies discussed in the manual | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |
| The manual helped me to think about Quality | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| Assurance in Higher Education | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Comments:** | | | | | |

2. What according to you are the strengths of the module? Why do you think so?

3. What according to you in this module needs improvement? How?

4. Any other comments:

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