

ANALYSIS OF QUALITY INDICATORS OF HIGHER EDUCATION IN PAKISTAN

Dr Muhammad Hamid Ullah¹

Dr Muhammad Ajmal²

Dr Fazalur Rahman³

ABSTRACT

Higher education plays a leadership role in education. The study was designed to assess quality indicators of higher education institutions of Pakistan. It was a descriptive study and conducted in twenty universities. Both public and private universities were equally taken in the study. The sample of the study consisted of administrators, academicians and students. A total of 100 administrators, 300 academicians and 1000 students participated in the study. A questionnaire consisting of 14 items was used to collect data from the respondents. It was found that private universities lacking trained faculty members, equipped library, merit based admission policy, research and hostel facilities. The study also revealed that public sector universities were lacking equipped laboratories and multi-media use. It was recommended that the higher education commission introduce an academic audit system and provide foreign training to faculty members of universities. The study also recommended that merit based admission policy be ensured in the universities.

Key words: Higher education, quality indicators, quality assurance

INTRODUCTION

Higher education plays a vital role in the development of society. "Universities, for centuries, had a crucial role in educating the potential professionals, businessmen, political leaders, religious and social scholars, who serve the society, to enrich its values and develop its resources" (Mustard, 1998). These are also highlighted in the national objectives of higher education.

HIGHER EDUCATION

The importance of education is realized everywhere and is now on top of the political agenda of most nations. Pakistan has paid dearly for neglecting education. Pakistan after 56 years of its existence does not find itself in an enviable position. Pakistan is still spending only 2.7 per cent of its GNP on education and not 4 per cent, as recommended by UNESCO for all developing countries (UNDP, 2002).

The Dearing Report (1997) underlines the importance of higher education in these words: "For the state, higher education has become a crucial asset. It must recognize what it will gain from ensuring the well being of higher education. In return, higher education must recognize

¹ Assistant Professor at Riphah International University Islamabad. hameedullah@riphah.edu.pk

² Lecturer at Department of Distance, Non-formal and Continuing Education, Allama Iqbal Open University, Islamabad. drajmal@aiou.edu.pk

³ Lecturer at Department of Early Childhood & Elementary Teacher Education, Allama Iqbal Open University Islamabad. fazaliou@yahoo.com

its obligation to society as a whole."

It is observed that with knowledge based economies and globalization, higher education has become more important, and in particular the quality of education is critical to national development. The problem with developing countries including Pakistan is that they have given a relatively low priority to higher education. The World Bank (2000) in a report states that "without more and better higher education, developing countries will find it increasingly difficult to benefit from the global knowledge-based economy".

QUALITY EDUCATION

The US Department of Education (2002) defines the quality of education by its fulfillment of the national educational goals and objectives. These objectives may broadly be classified into three categories:

Social Excellence

National Excellence

Academic Excellence

INDICATORS

There are a range of statistical and non statistical indicators intended to offer an objective measure of how a higher education institution is performing. Some of the indicators are: User satisfaction, Use of entry qualification, Student retention, Learning / teaching output, Research, Graduate employment, Change in attitude of the students. (Chande, 2006)

INDICATORS OF QUALITY EDUCATION

Quality indicators can be divided into three classes: educational inputs, educational outputs, and educational processes. Inputs include financial measures, physical measures, and manpower measures associated with the resources that are provided for students at each educational level. Financial measures are generally summarized by educational expenditures per student. Physical measures include the age, condition, and comprehensiveness of such facilities as classrooms, laboratories, and libraries and the provision and use of international materials and equipment. Manpower or human resource measures include the number of personnel of different types, often expressed as ratios in relation to student numbers at each level. They also include background information about these personnel such as educational qualifications, experience, and perhaps knowledge competencies and attitudes (Murnane, 1987).

Educational outputs refer to the consequences of the educational process as reflected in measures such as the levels of knowledge, skills and values acquired by students while educational processes refer to all processes from curriculum development to final assessment including admission, teaching and learning. These quality indicators are difficult to measure. There are different approaches to address this problem. Harvey and Green (1993) identify five different approaches in measuring quality in higher education. These include the definition of quality:

- In term of the exceptional (higher standards)
- In terms of consistency (zero defects and getting it right the first time)
- As fitness for purpose (meeting stated purposes)
- As value for money and
- As transformative (transformation of the participant)

However, it is imperative that quality should be initially defined before specific mechanisms are identified. One of the most difficult problems in quality management and in assessing quality is how to strike a balance between external evaluators and internal evaluators. The current situation enjoys the benefit of nearly four decades of thinking in this regard, including the various conflicting approaches about whether attention should be given only to the output or whether both the inputs and the throughput should be taken into consideration. The current thinking appears to favor a distinction between Quality Audit and Quality Assessment (Harvey & Green, 1993).

1. Quality Audit: The main features of quality audit procedures are:

- They operate at the institutional, rather than course/program, level.
- They are concerned with processes, procedures and their operations.
- They are not concerned with any assessment or evaluation of the objectives or with the appropriateness of the outcomes.

2. Quality Assessment: Quality assessment is the responsibility of the funding agencies. The aim is to assess the social relevance of the institution's programs and the worth of its products in terms of societal goal.

There are two current players in the quality standards field. One is the ISO 9000 series of auditable quality standards and the other is the evolving global alliance for transnational education (GATE). GATE proposed the following principles for quality of higher education programs:

1. Goal and objectives
2. Standards
3. Legal matters
4. Student enrollment and admission
5. Human resources
6. Physical and financial resources
7. Teaching and learning
8. Evaluation

A range of criteria for each principle clarifies requirements to external review (Lenn, 1997).

WHAT IS QUALITY ASSURANCE?

Ellis (1993) defines quality assurance as a process whereby a consumer or other interested party is made confident that standard will be maintained. Carley and Waldron (1984) defined it as planned, deliberate activities instigated and carried out with the intent and purpose of maintaining and improving the quality of learning for participants.

A more inclusive definition is provided by Harvey & Green (1993), who refer it as "those mechanisms and procedures designed to reassure various 'stakeholders' in higher education that institutions accord a high priority to implementing policies designed to maintain and enhance institutional effectiveness".

Therefore, it is a combination of several principles (e.g., setting of quality objectives, planning activities to meet these objectives) and philosophies that promote commitment and motivation. Frazer (1992) in his critique of quality control argues that the overall quality of a university is dependent on all aspects of the university's activities.

QUALITY ASSURANCE APPROACHES

These include:

i. External Approaches

It is frequently stated that an institution's internal committees of faculty are kept on track through the guidance of external review committees (Dow, 1992). External review committees can be formed by a group of universities and their faculties (Fincher, 1991). To Frazer (1992) the first stage of external review "must be a document reporting the self-evaluation", but further visits should be for the purpose of meeting with both small and large groups at the institution. However, quality assurance might be achieved within an individual program in a university as a process of internal review.

ii. Internal Approaches

L'Ecuyer (1993) mentioned that "quality assurance is first and foremost up to the institutions themselves. Central agencies are not there to do the institution's job, but to ensure that they do it properly and, if necessary, more satisfactorily". According to Becher (1992), it has a positive effect on faculty involvement, interest, and teaching effectiveness.

iii. Outcome Assessment

It is the assessment of institution as well as of students.

The above three components are clearly evident in most quality assurance systems. These three components must be part of an integrated approach to the quality of teaching and programs offered at an institution.

QUALITY IN HIGHER EDUCATION

Quality in higher education is a multidimensional concept, which includes all the related functions and activities that form part of the academic life in a university system. Therefore, any framework for the assessment of quality should take into account the quality of students, teachers, infrastructure, student support services, curricula, assessment and learning resources.

A number of factors, such as internationalization, marketing, proliferation, competition, expansion of higher education and greater accountability have brought the concern of quality of higher education to the forefront of national debate. Given below are some of the main

indicators of quality education:

1 Quality of Staff and Faculty

- a. Faculty Development: Focuses on the knowledge, skills, sensitivities and techniques of faculty members, rather than on the courses they teach.

Organizational Development: Seeks to change the structure, policies and organizational environment in which instruction takes place.

- b. Instructional Development: Focuses on the systematic design, development, implementation and evaluation of instructional materials, lessons, courses and curricula.

- c. Teacher training programs: These include

- i) Pre-service training programs

- ii) In-service training

- iii) Seminars, conferences and workshops

2 Quality of Students

The quality of the students constitutes the raw material of higher education, which requires special attention to their problems of access in the light of criteria related to merit (abilities and motivation); proactive policies for the benefit of the disadvantaged.

3 Quality of Curricula

The quality of curricula calls for: special care in the definition of objectives of training provided in relation to the requirements of the world of work and the needs of society; an adaptation of teaching methods to make students more active and to develop an enterprising spirit; an expansion of, and greater flexibility in, training facilities so as to make full use of IT and networking of curricula, students and teachers.

4 Quality of Infrastructure

The quality of the infrastructure of the internal and external environment.

5 Quality of Management and Governance

The quality of the management of the institution as a co-ordinate and coherent whole, interacting with its environment, it being impossible for institutions of higher education to exist as isolated enclaves. Rapid growth of knowledge useful to management will demand a higher quality of managers. The functions of the management are (Massey, 1992):

- a. Decision-making
- b. Organizing
- c. Staffing
- d. Planning

- e. Controlling
- f. Communicating

6 Quality of Accountability

The quality of higher education is closely dependent on systemic evaluation and regulation. This entails inculcating a culture of evaluation within the institution, i.e. a concern to set up systems for the gathering of relevant, valid, reliable data to enable those with a role to play in this respect to take the necessary decisions to improve activities and outcomes.

HIGHER EDUCATION IN PAKISTAN

The situation of higher education at the time of independence was very precarious. Pakistan had only one University (Punjab University) in 1947 (Khawaja, 1996). In Pakistan 3 per cent of the age cohort of 17-23 years was enrolled in the colleges and universities. This is one of the lowest ratios anywhere in the world. Thus, the country needs very significant improvement in the quality of higher education and considerable enhancement of its capacity. Realizing the issue of quality, the Higher Education Commission of Pakistan Quality Enhancement Cells (QECs) were established at ten public sector universities in 2006, whereas in 2007-08 twenty more QECs were established in the public sector universities for improvement of their academic, teaching and learning standards. The QEC family was extended to another fifteen public sector and seventeen private sector universities in 2009-10. QEC's will be established in the remaining universities in a phased manner (HEC, 2010).

ISSUES OF QUALITY OF HIGHER EDUCATION IN PAKISTAN

The issue of quality cannot be dissociated from the quest for excellence and the need to establish evaluation criteria. In order to assess local institutions with a global perspective, reviewing institutions against international quality benchmarks has gained precedence. Such criteria must however be adapted to take into account the diversity of situations, and the academic culture in Pakistan. The need to develop a culture of evaluation is inseparable from the concept of quality, itself intimately bound up with the successful democratization of the higher education system. Standard quality assessment practice involves the comparison between observed and intended outcomes (of programs and institutions) and continuous analysis of the sources of dysfunction. Both internal self evaluation and external review are vital components of any well-developed quality assurance system.

The key factors influencing the quality of higher education are the quality of faculty, curriculum standards, technological infrastructure available, research environment, accreditation regime and the administrative policies and procedures implemented in institutions of higher learning. It is absolutely critical to monitor and regulate growth of sub-standard institutions of higher learning. A comprehensive multi-level mechanism of accreditation is to be developed to ensure provision of quality education. Accreditation needs to occur at the department or program level, as well as the institutional level (HEC, 2010). Different issues of the quality of higher education in Pakistan as identified by Iqbal (2004) are:

1. Ineffective governance and management structures and practices
2. Inefficient use of available resources
3. Inadequate funding

4. Poor recruitment practices and inadequate development of faculty and staff
5. Inadequate support for research
6. Politicization of faculty, staff and students
7. Strong skepticism about the realization of reform

It may be summed up that there are four pivotal issues in higher education:

1 Relevance

This refers to getting together with the world of work, with the other levels of the education system, so that it links up into an unbroken educational chain; getting together with culture and individual cultures and getting together with everyone, in all places and at all times, by means of more flexible training facilities, so that learning throughout life may be achieved. It also includes getting together with students and teachers. This implies both internationalization and further contextualization, in the design of programs of teaching and research and the networking of those programs as well as in the application of standards.

2 Quality

Quality is inseparable from social relevance. The implication of the quality requirement and of policies aiming for a "quality safeguard" approach is that improvements should be sought, at the same time, to each of the component parts of the institution and to the institution as an integral whole, functioning as a coherent system. The quality of higher education is dependent on:

The quality of the staff, which implies: acceptable social and financial status; a will to reduce inequalities such as those relating to gender; a concern to manage staff in accordance with the merit principle and provide them with in-service training; the establishment of incentives and structures to encourage researchers to work in multidisciplinary teams on thematic projects. Similarly, quality of curricula and of students, which constitute the raw material of higher education. Quality of infrastructure and quality of management of the institution as a coherent whole, interacting with its environment. Further the quality of higher education is closely dependent on systemic evaluation and regulation. This entails inculcating a culture of evaluation within the institution that entails developing a culture of autonomy, responsibility and accountability.

3 Management and Funding

These are regarded as a set of sub-systems (missions, structures, resources, culture, admissions, validations, management) interacting with one another and with the local, national, regional and international environment.

4 Co-operation

A universal vision of higher education implies multiple forms of co-operation involving all the institutions whose mission is to work towards sustainable human development and a culture of peace (UNESCO, 1996).

RELATED RESEARCH

Arshad (2003) found that university teachers accepted challenges and extra workload if they received extra financial reward. He also found that there is no system of training for university teachers in Pakistan. Malik (2002) found that students, teachers and parents were not satisfied with teaching standard, physical and research facilities, poor library support, and ill equipped laboratories. Moosa (2003) concluded that there was a need to develop appropriate framework for quality assurance and use of proper quality tools in universities. Saeed (2003) suggested a framework to ensure qualitative improvement in higher education in the country. On the other hand Kalam (2003) stressed periodic meetings of all statutory bodies as a basic quality principle.

THE OBJECTIVES OF THE STUDY

The main objectives were to:

- i. Investigate quality indicators in public and private sector universities
- ii. Examine the quality of management of public and private universities
- iii. Compare the quality of infrastructure in public and private sector universities

RESEARCH METHODOLOGY

The study was descriptive research. The following procedure was adopted for the study.

SAMPLE OF THE STUDY

Stratified sampling technique was used to select the sample. A total of 100 administrators, 300 teachers and 1000 students of twenty universities participated in the study. The detail of the sample is given in tables 1 and 2:

Table 1 **Sample details**

Category of Universities	Number of Universities	Administrators	Teachers	Students
Public universities	10	50	150	500
Private universities	10	50	150	500
Total	20	100	300	1000

INSTRUMENT OF THE STUDY

A questionnaire was used for data collection from the respondents. All the questions were developed on a 5 point Likert Scale and these were coded from 5 to 1 (strongly agree to strongly disagree). Information was also obtained from the concerned departments' five year plans, educational reports, economics surveys and Higher Education Commission statistical indexes.

Table 2 Respondent details

Category of Respondents	Job/ title	Number of Respondents
Administrators	Dean	18
	Head of Department	33
	Registrar	14
	Controller of Examination	8
	Resident Officer	4
	Deputy Registrar	13
	Assistant Registrar	10
	Professor	32
Teachers	Associate Professor	77
	Assistant Professor	89
	Lecturer	102
	Ph.D.	12
	M. Phil.	31
Students	MA/M.Sc.	423
	MBBS	47
	BDS	38
	Engineering	171
	BA/B.Sc.	278

DATA ANALYSIS

Data collected were tabulated and analyzed by using percentage and two way chi square as mentioned in the tables below:

Table 3 Summary of opinion of Administrators

Statement	University	OPTION PERCENTAGES					χ^2 (df=4)
		SA	A	UNC	D A	SDA	
							p<0.05
Building fulfills the instructional requirements of students.	Public	38	30	-	7	9	10.7
	Private	30	46	8	12	4	
Repair & maintenance is conducted regularly.	Public	26	26	4	24	20	9.8
	Private	42	24	14	14	6	
Admission rules strictly followed	Public	26	50	4	12	8	13.5
	Private	44	16	4	24	12	
Classrooms are sufficient and well equipped.	Public	22	26	2	40	10	10.9
	Private	34	38	8	14	6	
Laboratories are equipped with all necessary instruments.	Public	34	44	8	14	-	9.2
	Private	28	46	10	10	6	
Library is well furnished and equipped with books and journals.	Public	38	34	4	16	8	n.s
	Private	40	42	6	10	2	
Faculty is complete with professional people as per HEC criteria.	Public	24	38	8	14	6	11.0
	Private	22	26	2	40	10	
Computer facility is available to students and staff	Public	38	22	6	20	14	14.6
	Private	8	24	4	36	28	
Hostel facility is available to students	Public	44	18	-	26	12	11.6
	Private	18	16	6	34	26	
University has transport facility for students and staff.	Public	48	28	-	16	8	n.s
	Private	30	36	4	14	16	
Multi-media are available and uses in the classroom.	Public	38	26	8	18	10	10.7
	Private	40	28	-	18	14	
Research facilities are available to students and staff.	Public	14	42	6	20	18	n.s
	Private	40	36	6	26	14	
Environment of campus is student friendly	Public	24	16	4	38	18	n.s
	Private	18	38	8	26	8	
Budget collection is sufficient for all academic activities.	Public	34	18	6	22	20	n.s
	Private	36	30	4	20	10	

The table revealed that private universities were better in respect to building, maintenance and classroom facilities while public universities were better in terms of admissions policy, faculty, computer, transport and hostel facilities.

Table 4 Summary of opinion of Teachers

Statement	University	OPTION PERCENTAGES					χ^2 (df=4)
		SA	A	UNC	DA	SDA	
							p<0.05
Building fulfills the instructional requirements of students.	Public	29	41	5	7	18	30.5
	Private	32	53	5	10	-	
Repair & maintenance is conducted regularly.	Public	17	34	2	23	25	68.0
	Private	48	27	11	13	1.0	
Admission rules strictly followed	Public	46	40	4	4	6	14.0
	Private	30	50	10	7	3	
Classrooms are sufficient and well equipped.	Public	17	26	7	30	21	58.4
	Private	48	44	3	13	3	
Laboratories are equipped with all necessary instruments.	Public	24	28	12	28	8	28.7
	Private	33	45	10	13	-	
Library is well furnished and equipped with books and journals.	Public	32	28	14	22	4	21.4
	Private	27	50	13	7	3	
Faculty is complete with professional people as per HEC criteria.	Public	32	53	5	10	-	31
	Private	28	41	6	7	18	
Computer facility is available to students and staff	Public	26	38	8	20	8	35.9
	Private	44	46	5	5	-	
Hostel facility is available to students	Public	18	42	4	20	6	13.8
	Private	16	42	16	13	13	
University has transport facility for students and staff.	Public	16	28	8	12	26	10.6
	Private	15	31	8	33	13	
Multi-media are available and used in the classroom.	Public	16	32	8	28	16	30.0
	Private	31	46	6	14	3	
Research facilities are available to students and staff.	Public	14	24	12	30	20	15.8
	Private	10	20	30	27	13	
Environment of campus is student friendly	Public	20	50	12	12	6	12.8
	Private	32	53	5	7	3	
Budget collection is sufficient for all academic activities.	Public	12	24	14	32	18	39.0
	Private	24	36	17	23	-	

Teachers were of the opinion that private universities were better in respect to building, maintenance & classroom facilities, library, laboratory, computer, multimedia use, transport, budget allocation for academic activities and friendly campus environment while public universities were better in terms of admissions policy, faculty, research facilities and hostel facilities.

Table 5 Summary of opinion of students

Statement	University	OPTION PERCENTAGES					χ^2 (df=4)
		SA	A	UNC	D A	SDA	
							p<0.05
Building fulfills the instructional requirements of students.	Public	19	42	8	22	8	43.7
	Private	14	57	2	16	11	
Repair & maintenance is conducted regularly.	Public	24	23	16	23	13	44
	Private	20	50	8	17	5	
Admission rules strictly followed	Public	35	36	8	11	9	n.s
	Private	30	37	13	11	10	
Classrooms are sufficient and well equipped.	Public	16	37	8	23	15	46.0
	Private	25	53	4	6	12	
Laboratories are equipped with all necessary instruments.	Public	26	28	11	19	17	94.8
	Private	36	46	2	11	6	
Library is well furnished and equipped with books and journals.	Public	26	35	7	24	8	16.9
	Private	29	41	3	17	10	
Faculty is complete with professional people as per HEC criteria.	Public	44	46	5	5	-	36.0
	Private	26	38	8	20	8	
Computer facility is available to students and staff	Public	24	33	8	18	17	41.6
	Private	33	38	10	13	6	
Hostel facility is available to students	Public	22	40	4	14	20	30.8
	Private	30	31	11	14	14	
University has transport facility for students and staff.	Public	24	25	10	12	27	84.0
	Private	25	43	11	14	7	
Multi-media is available and use in the classroom.	Public	19	35	8	18	20	62.0
	Private	11	43	20	15	10	
Research facilities are available to students and staff.	Public	18	21	14	25	24	35.6
	Private	11	28	25	20	17	
Environment of campus is student friendly	Public	22	42	12	14	10	66.6
	Private	25	56	8	11	-	
Budget collection is sufficient for all academic activities.	Public	20	21	15	18	26	68.8
	Private	32	29	18	13	8	

Students were of the opinion that private universities were better in terms of building, maintenance & classroom facilities, laboratory, computer, multimedia use, transport, budget allocation for academic activities and friendly campus environment while public universities were better in terms of faculty, research facilities, library and hostel facilities.

Table 6 Summary of opinion of respondents

Public Universities		Private universities	
Strengths	Weaknesses	Strengths	Weaknesses
Merit based admission policy	Ill-equipped laboratory	Well equipped classrooms	Weak faculty
Strong faculty	Ill-equipped classroom	Well equipped laboratory	Fewer research facilities
Many research facilities	Defective transport facility	Good transport system	Lack of hostel facility
Hostel facility	Less multi-media use	Effective multi-media use	Weak library support
Rich library support		Sufficient allocation of funds for academic activities	
		Student-friendly campus	
		Well organized maintenance system	

Table 7 Summary of Suggestions by Academicians

Suggestion	Percentages
Faculty members may be provided foreign training in their respective field	81
Non PhD faculty members may be awarded scholarship for higher studies	64
Lucrative salary package for academician	57
Staff development centre for in-country training of academicians	34
Merit based admission and assessment system	59
Academic audit by HEC	70

RESULTS AND DISCUSSION

Higher education is today recognized as a capital investment in education. (World Bank, 1990). It plays a vital role in the development of society. Universities for centuries have had a crucial role in educating the potential professionals, businessmen, political leaders, religious and social scholars, who serve the society (Khurshid, 1998).

Prior to the 1980s higher education in Pakistan was the sole responsibility of the government. There were few institutions of higher education in the private sector. From 1985 onwards,

many institutions have been established in the private sector that are providing higher education in the fields of medicine, engineering, information technology, computer sciences, business studies and commerce.

The question of quality in higher education is directly related to the quality of teachers, students and the infrastructure provided to them by the educational institutions. The level of competence of teachers, curricula and the standards of student intake are the major contributing factors in the deteriorating quality of higher education. In Pakistan, quality of higher education is deteriorating both in the public and the private sectors. This study highlighted some of the key factors that directly relate to quality enhancement. The study revealed that both public and private universities have strengths and weaknesses. The in-depth analysis of the universities indicated that there is no uniform implementation of the HEC criteria for universities. Though there is an appropriate yardstick for quality assessment of the universities this is violated one way or the other. However, this can be accepted for some reasons as the universities are passing through a transition period. The universities are steadily moving towards improvement but there is a dire need of implementing national and international quality control standards.

On the one hand the public universities have a strong faculty but the physical infrastructure is less developed. On the other hand, the private universities not only are violating admission standards but also have a shortage of appropriate faculty. In this situation the responsibility lies on the shoulders of the Higher Education Commission to maintain uniform quality standards in the universities.

RECOMMENDATIONS

In the light of this study, the following recommendations are made.

1. A uniform admissions policy may be implemented in the universities.
2. Properly qualified faculty may be ensured in the universities.
3. A plan may be devised for non PhD faculty members of the universities so that they could be registered in PhD programs.
4. Foreign training of all the faculty members may be planned.
5. Hostel facilities may be ensured in all institutions of higher education.
6. Multi-media use in the universities may be encouraged and all necessary arrangements made in this regard.
7. A uniform and lucrative salary package for faculty members may be introduced to attract quality teachers in the universities.
8. Research activities may be given preference in the universities.

REFERENCES

- Alvi, N. A & Alam, A. (2004). Pakistan Institute of Quality Control. *Quality Review, Vol. 1. J* Ibrahim Publisher. Lahore
- Arshad, M. (2003). Attitude of teachers of higher education towards their profession. (M.Phil.thesis). Allama Iqbal Open University, Islamabad
- Ascher. (1997). Principles for transnational educational courses. *GATE Newsletter 2 pp. 6-7.*

- Becher, T. (1992). Making audit acceptable: A collegial approach to quality assurance. *Higher Education Quarterly* 46(1), pp. 46-66
- Berdahl, R O. et al. (1991). *Quality and access in higher education: Comparing Britain and the United States*. Buckingham: Open University Press
- Carley, R & Waldron, M.W. (1984). Quality assurance and continuing education. *Canadian Journal of University Continuing Education* 10(1): pp. 53- 67.
- Chande, S. U. (2006) Performance Indicators of an Institute of Higher Education. Proceeding of 1st International Conference on Assessing Quality in Higher Education (2006). Institute of Quality & Technology Management University of Punjab, Lahore. p.14
- Dearing, R. (1997). Higher education in the learning society. Committee of enquiry into higher education. London
- Dow, K. L. (1992). Quality assurance in higher education. Proceeding of an international conference. Hong Kong
- Ellis. R. (1993). The management of quality at the university in higher education, Ulster
- Fincher, C. (1991). Assessment, improvement and cooperation: the challenge of reform in higher education. Institute of Higher Education, University of Georgia. Athens, Georgia
- Frazer, M. (1992). Quality assurance and higher education. Proceeding of an international conference. Hong Kong
- Ministry of Education. (2002). Report of the task force on the improvement of higher education in Pakistan: Challenges and opportunities. Islamabad
- Harvey, L & D. Green. (1993). Defining quality assessment and evaluation in higher education no. 18 (1), London
- Higher Education Commission. (2010). Quality assurance cell. Retrieved from www.hec.gov.pk on January 07, 2010.
- Iqbal, A. (2004). Problems and prospects of higher education in Pakistan (unpublished Ph.D. thesis). University of Arid Agriculture. Rawalpindi
- Kalam, A. (2003). Attempting for excellence in higher education. Paper presented at National Conference on Quality Assurance in Education in Pakistan. Pakistan Institute of Quality Control. Lahore
- Khawaja, A. H. (1996). Difficulties and possibilities in university. *Pakistan Perspective*, Vol. 1, No. 3. University of Karachi. Karachi
- Khurshid, A. (1998). The Role of university in preparation of individuals for career in management and business. In: J. Talate et al. (eds.): *Higher Education: A Pathway to Development*. Agha Khan University Press. Karachi

- L'Ecuyer, J. (1993). Quality assurance in Quebec universities. Paper presented at OECD Conference on Institutional Management. Paris
- Lenn. M. P. (1997). The global alliance for transitional education. Proceeding network for quality assurance agencies in secondary education conference. Association Conference Organisers.
- Malik, S. (2002). Factors affecting the development of female higher education in Pakistan. (PhD Thesis) University of Arid Agriculture. Rawalpindi
- Massey, L. D. (1992). Quantitative aids for decision making. (PhD dissertation) State University of Virginia.
- McCarthy, D. L. (1997). *Investment for development and social change*. McGraw Hill. New York
- Moosa, K. (2003). Quality assurance in education: An Overview. Paper presented at National Conference on Quality Assurance in Education. Pakistan Institute of Quality Control. Lahore
- Murnane, G. (1987). *Total quality management in higher education: an international perspective*. Buckingham: Open University Press.
- Mustard, F. (1998). *The Nurturing of creativity: The role of higher education*. Oxford University Press. Karachi
- Saeed, K. A. (2003). Quality in higher education and universities. Paper presented at National Conference on Quality Assurance in Education in Pakistan. Pakistan Institute of Quality Control Lahore
- UNDP. (2002). *Human development report 2002*, Oxford University Press, New York
- UNESCO. (1996). Policy Paper for Change and Development in Higher Education, Paris
- US Department of Education (2002) US Strategic Educational Plan 2002-2007, USA
- World Bank, (1990). Higher Education and Scientific Research for Development in Pakistan. Vol. I and II, Report No. 823, Islamabad
- World Bank (1994). Report on Higher Education: The Lesson of Experience, Islamabad
- World Bank. (2000). *Report on Higher Education in the Developing Countries: Peril and Promise*. Oxford University Press