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HIGHER EDUCATION AND NATIONAL DEVELOPMENT

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HIGHER EDUCATION AND NATIONAL DEVELOPMENT

1. DEVELOPMENT OF HIGHER EDUCATION

1.1 Historical perspective

The situation of higher education at the time of independence was very precarious. Pakistan of today inherited only one fully-established and functioning University in 1947. This was the University of the Punjab established in 1882 which functioned more or less on the pattern of the Indian Universities of Bombay, Calcutta and Madras founded in 1857 on the model of the University of London. The University of the Punjab as in the case of other universities, started its functions as an examining body. Subsequently, it took upon itself teaching functions. The University of Sind was established in 1946 just a year prior to independence. There were however a few prestigeous colleges, a majority of which were located in Lahore. Some of these elite institutions were Government College, Lahore; F.C. College, Lahore; King Edward Medical College, Lahore; Islamia College, Lahore; Hailey College, Lahore; Kinnaird College for Women, Lahore; Engineering College, Lahore; D.J. Science College, Karachi; N.E.D.College of Engineering, Karachi; Islamia College, Peshawar and Edwards College, Peshawar. These institutions were offering courses at undergraduate and graduate levels. The requirement for admission at institutions of higher education was matriculation. A majority of these institutions were offering courses of general education.

It may be mentioned that prior to 1954, the Universities were concerned with education at all levels beyond matriculation. It was the responsibility of the universities to conduct matriculation examination and frame their syllabi. On the recommendations of the Education Commission (1959), the Boards of Intermediate and Secondary Education were created to cater for the academic and examination needs of the secondary and higher secondary classes, i.e. classes 9-12. Thus, universities became responsible for graduate, post-graduate and further education.

Institutions of higher education as well as at school level were handicapped by lack of staff, for most of the teaching personnel had migrated away to India at the time of independence. As such there was an urgent need of qualified personnel in almost all fields of education and administration. Many of the places vacated by those who went away to India were filled by teachers and qualified personnel who came to Pakistan after migration. In some cases, however, even make-do arrangements for teachers were considered necessary.

There were very few professional, technical and vocational institutions. The need was felt for opening new institutions of higher education. Thus new colleges and Universities were set up gradually.

As a new nation on the map of the world with an ideological foundation, Pakistan had to evolve its own system of education. The leaders and the educationists alike started grappling with the formulation of an action plan and setting

up of an educational strategy. Quaid-i-Azam Mohammad Ali Jinnah, the father of the nation, set the task of educationists when he observed:

> "We have to build the character of our future generation to instil into them the highest sense of honour, integrity, responsibility and selfless service to the nation".

Regarding the type of education, he declared "there is an immediate and urgent need for giving scientific and technical education to our people".

The first Education Conference held in 1947 recommended a review of the educational system in vogue to bring it in line with the nation's aims, objectives and needs. Education was seen as a national investment and considered vital for development. It was recognised that the structure and system of education should have an ideological and indigent foundation.

1.2 National Development and Higher Education

1.2.1 National Development Goals and characteristics

The World has witnessed that the countries with higher levels of education are enjoying much progress and privileges in all spheres of life. The economically advanced countries are at the top most rungs of the ladder of scientific and technological growth. The growth in scientific and technological fields has direct correlation with growth in the field of higher education, particularly the science and technology education. Therefore, there is need that economically less advanced and/or developing countries must give more emphasis to develop their systems of

education across the levels and especially at higher education level, for this is the level which directly produces the persons who are assigned the responsibility of national development in industry, in universities and at key positions in the government, etc. Pakistan, one of the developing countries of the world and well conscious of the national development needs, gave due emphasis to the field of education and training.

The first Five Year Plan (1955-60) laid stress on to make up qualitative deficiencies in education and on expansion of the system as permitted by the limited resources. The major characteristics of this Plan included, evolution of unified system of higher education through strengthening of the then existing universities, separation of the intermediate from degree classes, transference of professional colleges to the control of the universities, reorientation of the functions of the universities towards teaching and research rather than examining and affiliating, and effective establishment of the role of the universities in providing guidance and leadership.

The Second Five Year Plan (1960-65) emphasized the concept of education as one of the most vital national investment and an important determinant of economic growth and development of a country. Therefore, corresponding emphasis was also assigned to higher education and in order to encourage and facilitate research at the universities, the plan envisaged the construction of libraries, laboratories, study rooms for teachers, and other essential buildings at the universities. Three new universities started building up their campuses. This was in recognition

of the fact that the universities have a special duty in the development of fundamental research in scientific fields which is basic to the country's progress and welfare.

The Third Plan (1965-70), in further recognition of the basic concept of education underlying the Second Five Year Plan, set forth the following objectives of education:

i. to provide an educational system which would facilitate transition into an era of science and technology, promote political, social and economic development,

ii. to raise the quality of education at all levels so that it may properly fulfill its nation building tasks.

Quality education was the key note of this Plan. Another important area was the increased facilities for technical and vocational education. In order to provide practical training, it was envisaged to set up Advisory Committees on which industry and other employing authorities were to be fully represented. Other major characteristics of the Third Plan regarding higher education included:

i. expansion and strengthening of teaching of science and other technological subjects which are of direct relevance to Pakistan's development efforts,

ii. provision of opportunities to teachers of science to improve themselves professionally,

iii. consolidation of institutions of higher education, and

iv. expansion of facilities for study and research in scientific and technological disciplines.

Due to shortage of funds, resources allocated to education were diverted to other economic sectors with the result that the provisions envisaged in various plans could not be implemented. This created serious imbalance between man-power needs and education output. Therefore, the Fourth Five Year Plan (1970-75) among other, emphasized the following objectives:

i. to make the educational system more functional in terms of its contributions to productivity and economic growth,

ii. to make optimum use of the available resources including physical facilities, at all levels, and

iii. to strengthen and consolidate the programme of educational research and development planning.

The major characteristcs of this plan included:

i. to make the system of education more functional with respect of the future needs of the developing economy,

ii. emphasis on expansion and improvement of technical and vocational training in cooperation with employment opportunities,

iii. higher education should be guided and planned broadly in relation to manpower needs and employment opportunities,

iv. expansion of existing universities, mainly for the objective of raising standards and output of research activities, and improvement of facilities in scientific and technological fields.

This plan witnessed rapid expansion of higher education and improvements in technical education. Five new general universities including Allama Iqbal Open Univereity for non-formal education across the levels were established. A second campus of

Sind University was set up and two Engineering colleges were raised to the status of universities. Seven polytechnics were also raised to the status of colleges of technology to provide courses of studies at Bachelor of Technology (B.Tech) level. Inspite of this quantitative improvement, higher education was still faced with many problems. There was lack of correspondence between technical training programmes and skills required for jobs in the field. There was no qualitative improvement in higher education. Rather, balance of enrolment was tilted towards Arts discipline than to science and technology. In engineering education, there was lack of facilities for post-graduate training. Keeping this situation in view, the Fifth Five Year Plan (1978-83) aimed at:

i. emphasis an vocational and technical education and to make it relevant to actual job requirements of employers,

ii. attainment of more balanced distribution of enrolment between different streams,

iii. improvement and expansion of facilities for the teaching of science and technology,

iv. expansion of facilities for higher education in under developed regions,

v. promotion of doctoral and post-doctoral research through strengthening of centres of excellence and providing incentives to university teachers,

vi. strengthening of post-graduate programmes at one of the universities of Engineering and Technology,

vii. expansion of facilities for female students particularly at the post-graduate level.

In the last three plans considerable development expenditure was made on expansion of higher education. In the Fourth Plan it was about 50% of the total development expenditure on education. Therefore, the Fifth Plan envisaged to reverse the trend and recommended more allocation to expansion of primary education. Vocational and technical education came next. At secondary and higher education levels, there was a shift towards qualitative improvement. Its another characteristic was consolidation and improvement of institutions to raise the quality and productivity of engineers.

The Sixth Five Year Plan (1984-89) lays emphasis on qualitative improvement of higher education. One of the main beneficiaries of research and development programme being launched in this plan will be the universities. The allocations for scientific research and technological development are being increased five times the allocations in Fifth Plan with the objective of creating some specialized institutes of international standards and strengthening of the capabilities of existing institutes. The strategy proposed for realization of objectives of higher education includes:

i. improvement of physical and human resources of existing institutions through additional inputs and establishment of collaborative linkage between institutions imparting education at different levels;

ii. improvement of the management of institutions by delinking the intermediate section from the degree colleges and under-graduate programmes from the universities;

iii. development of selected university departments into Centres of Advanced Studies, specially for updating knowledge and skills of teachers through M. Phil, and Ph. D. Programmes;

iv. grant of autonomous status to reputed government colleges with considerable academic and administrative freedom;

v. induction of the private sector at all levels of higher education for introducing healthy competition and reducing state liability and control.

The plan seeks to restructure university education and to consolidate their human and physical resources. Degree level education would no longer be either part of college education or preparatory to higher education, it would become higher education in reality. At post-graduate level, a privately endowed university for Science and Technology Education, with complete academic and administrative freedom, would be established.

2.2 Policy Provisions

Various National Education Policies issued from time to time have also emphasized improvements in higher education and have highlighted various implementation strategies and programmes. The first Education Conference (1947) held at Karachi passed a resolution about higher education saying," It has been felt for a long time that the system of University education comprising the curricula, examinations and teaching method is unsatisfactory and requires a thorough review in order to bring it into line with our educational ideals and needs."

The Commission on National Education(1959) recognized higher education as a distinct stage from school education and recommended that matriculation examination and Intermediate classes may be dissociated from the universities and affiliation of colleges discontinued. The universities were, therefore, entrusted with the job of teaching graduate and post-graduate classes and conducting research in relevant fields.

The Commission on Students Problem and Welfare(1966) "attached greater importance to the provision of teaching, laboratory and library facilities than to ostentatious building. It recommended to spend more money in providing adequate and competent teaching staff, on equipping their laboratories and libraries and developing their research programmes in order to attain standards comparable with the universities of the developed countries.

The Proposals for A New Educational Policy (1969) "accepted that the greater factor in a nation's economic progress is the quality of its manpower resources which can be improved through education. The major emphasis in these proposals was on mass literacy than on secondary or higher education. In order to make educati n relevant to the manpower needs, it proposed more financial and administrative autonomy for the universities. Recommendation for establishment of Autonomous University Grants Commission was a step in this direction. It also suggested various measures for promotion of vocational and technical education across the levels.

The National Education Policy (1972-80) envisaged opening of new universities to cover all parts of the country.

It also set forth raising of status of various professional and engineering colleges to that of universities.

In order to coordinate the programmes of the universities and to develop their facilities, practical steps were taken under this Policy for the establishment of the University Grants Commission. Other major features of this policy included setting up of Centres of Excellence, Area Study Centres and Pakistan Study Centres at various universities of the country with the objective to increase facilities for research at the universities. It also emphasized shifting of trend from Arts to Science and Technology education at this level. Facilities for teaching of scientific subjects were to be added in degree colleges where they were not already present. Educational progress and economic uplift of a country is determined by the quality of teaching in its institutions of higher learning is the key statement of the National Education Policy and Implementation Programme (1979). Some of its major programmes envisaged for improvement of university education are as follows:

i. "The Federal Government will meet the entire expenditure (recurring and developmental) of the universities,

ii. the existing Centres of Excellence will be further strengthened and at least five more Centres of Excellence in important disciplines (Production oriented) will be established,

iii. certain departments of universities possessing necessary research potential will be developed as Centres of Advanced Studies for doctoral and post doctoral programmes,

iv. post-graduate classes will be introduced in selected Girls Colleges in all the Provinces".

It is obvious from the foregoing that much emphasis has always been given, to the higher education in general and scientific and technological education in particular, in various Plans and Policies over the years. But its implementation in true spirits of the words was hampered in one way or the other with the result that we, as a country, are still lagging behind in the field of scientific and technological progress. Rather we have to depend on other countries even for education and training of our experts in such fields. There is, therefore, need to revitalize our efforts and strive hard for qualitative and quantitative improvement of our higher education, especially the science and technology education.

1.3 Coordination and expansion of University Education

In view of the general proliferation of colleges, the programmes they offered, unplanned opening of different departments in various universities, general deterioration of standards of higher education and increasing deficits of university budgets, the Government established in July 1973 an independent autonomous corporate body, the University Grants Commission (UGC) to coordinate the programmes of universities for greater national development and to ensure purposeful flow of public funds for this purpose. It was to serve as a buffer between the Government and universities. UGC prepares programmes and plans for the development of universities and for the improvement of standards of higher education. Education at the college level (graduate level) is also controlled by the universities since degree colleges are affiliated to a

univereity within its area of jurisdiction for purposes of standards of education, curricula taught, examinations conducted and award of degrees at the graduate level (and post-graduate level in some cases).

At the time of independence in 1947, Pakistan inherited only one full-fledged university i.e. the Punjab University. The other university at Jamshoro, the Sind University (1947) had just taken a start. There are now twenty universities in the country, eight of them having been established in the last five years. The First Five Year Plan (1955-60) witnessed establishment of two universities, the University of Peshawar (1950) and University of Karachi (1951). During the Second Five Year Plan (1960-65) three more universities were established - the Agriculture university Faisalabad (1961), University of Engineering and Technology, Lahore (1961) and the Federal University and Quaid-e-Azam University, Islamabad (1965).

The Third Five Year Plan (1965-70) witnessed growth of one university at Quetta, the University of Baluchistan (1970). During the Fourth Plan (1970-75) period, four more universities made their appearance on the educational scene of Pakistan - the Allama Iqbal Open University (1974), Gomal University (1974) at D.I. Khan, Bahauddin Zakaria University (1974) at Multan and Islamia University (1975) at Bahawalpur.

During the period after 1975, various degree professional/technical colleges were raised to the status of universities. The Agriculture College at Tandojam, NED Engineering College at

Karachi and Sind University Engineering College at Nawabshah, were raised to the status of Universities and called Sind Agriculture University, Tandojam, NED University of Engineering and Technology Karachi, and Mehran University of Engineering and Technology, Jamshoro, respectively. The degree college at Khairpur had been raised to the level of the Second Campus of Sind University, Khairpur. The college of Agriculture, Peshawar and College of Engineering, Peshawar were raised to the level of universities and called NWFP university of Agriculture, and NWFP university of Engineering and Technology, respectively. Also National College of Engineering and Technology Karachi is Affiliated to NED University of Engineering and Technology, while a university college at Nawabshah has been affiliated with Mehran University of Engineering and Technology, Jamshoro. Recently, Islamic University has been established at Islamabad, University of Azad Jammu and Kashamir at Muzaffarabad and Agha Khan University at Karachi. Plan for one more university "Women University" are under preparation (List-1).

List-1

	Name of the Universities	Year of Establishment
1.	University of the Punjab, Lahore.	1882
2.	Sind University, Jamshoro.	1947
3.	University of Peshawar, Peshawar.	1950
4.	University of Karachi, Karachi.	1951
5.	Agriculture University, Faisalabad.	1961
6.	University of Engineering and Technology, Lahore.	1961
7.	Quaid-i-Azam University, Islamabad.	1965
8.	University of Baluchistan, Quetta.	1970
9.	Allama Iqbal Open University, Islamabad.	1974
10.	Gomal University, Dera Ismail Khan.	1974
11.	Bahauddin Zakaria University, Multan.	1975
12.	Islamia University, Bahawalpur.	1975
13.	Sind Agriculture University, Tandojam.	1977
14.	NED University of Engineering and Technology Karachi.	1977
15.	Mehran University of Engineering and Technology, Jamshoro.	1977
16.	NWFP University of Engineering and Technology Peshawar.	1980
17.	University of Azad Jammu Kashmir, Muzaffarabad	1980
18.	NWFP University of Agriculture, Peshawar.	1981
19.	Islamic University, Islamabad.	1981
20.	Agha Khan University, Karachi	1981
21.	Women University (under consideration)	

1.4 Development of Science, Technical and Professional Education

Science and technical education play an important role in enhancing growth and development by providing sound base for scientific advancement and technological development. Before developments are presented, it is pertinent to discuse the pattern and requirements of education.

1.4.1 Pattern, Structure and Requirements of Education

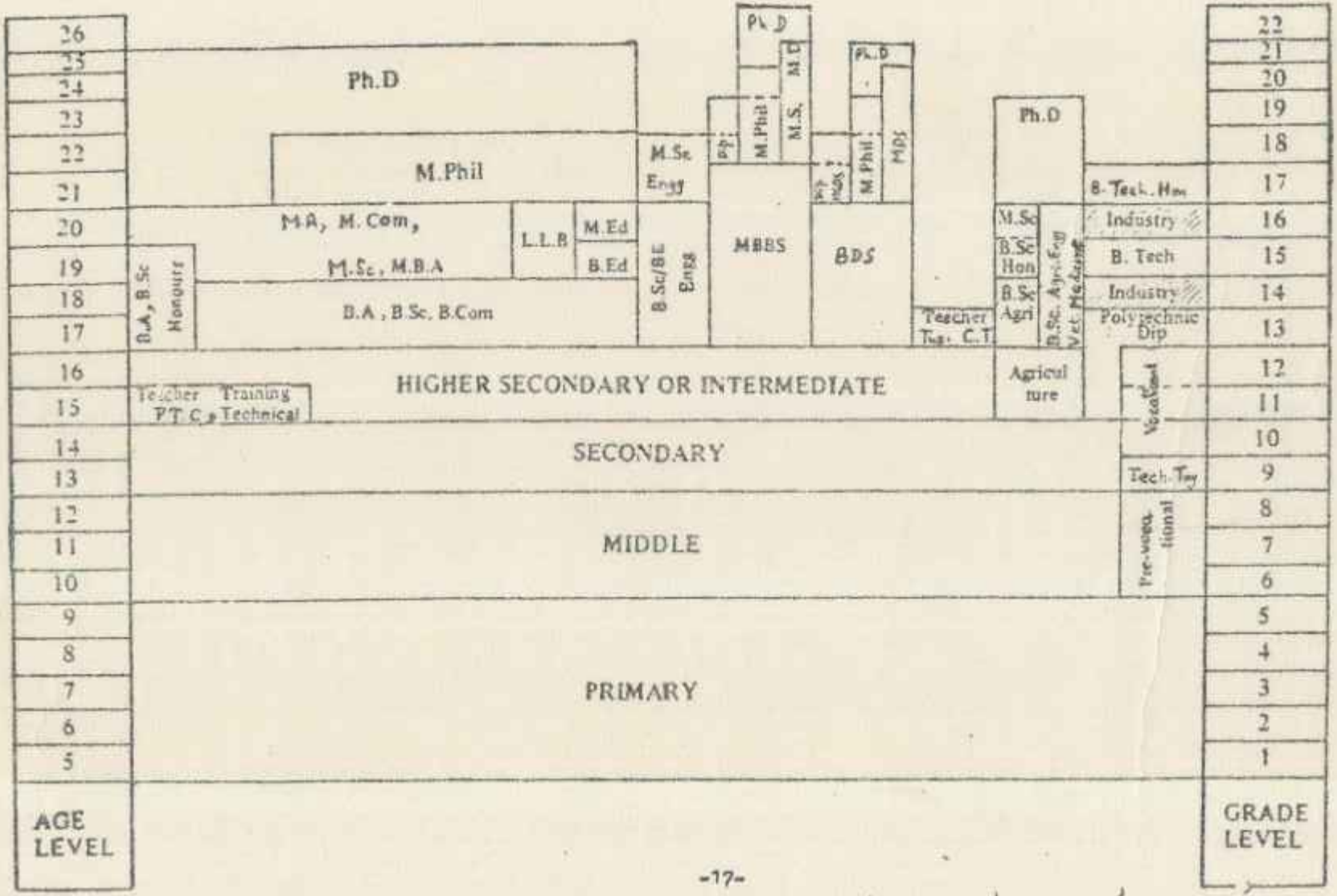
Pakistan has a 5:5:4:2 (5:3:2:2:2:2) pattern of education in which after ten years of schooling, a student attends a college and obtains Intermediate (Higher Secondary) Certificate in two years. With two more years he completes graduation (Bachelor's degree). Master's degree is earned with two additional years of study. The structure of the formal educational system is given in Chart-1.

The above Chart shows that there are four tiers of Education, namely, primary stage beginning from classes I to V, the secondary stage from classes VI to X (with classes VI to VIII forming the Middle), the Higher Secondary (Intermediate) stage from classes XI to XII and Higher Education from classes XIII to XVI and M.Phil XVII te XVIII and then Ph. D.

Students aged 5 to 9 years are enrolled at Primary level. The Boards of Intermediate and Secondary Education conduct the terminal Secondary School Certificate Examination at the end of ten years of schooling and the Higher Secondary School (Intermediate)

Chart-1

PAKISTAN EDUCATION SYSTEM



Certificate Examination at the end of the 12 years of education. Students who complete further two years of college education appear for the Bachelor Degree in Humanities, Commerce and Science in the examination conducted by the different universities. Masters Degrees in Humanities, Commerce and Science are awarded by universities in different fields/disciplines. Each University offers M. Phil/Ph.D. courses to research students after the completion of their Masters Degree.

There are separate Agriculture and Engineering Universities/colleges, Medical colleges and polytechnical colleges which offer professional courses in Agriculture Medicine and Technical Education and other specialized disciplines. Besides, there are a number of vocational and commercial institutes which award diplomas to the students in different trades and vocations.

Education in Medicine and Engineering in Medical Colleges and universities of Engineering and Technology, respectively commences after 12 years of schooling and takes 5 and 4 years to complete M.B.B.S. and B.Sc (Engineering) Degrees, respectively.

Degree in Law (L.L.B.) may be obtained in two years after Bachelor's Degree of 14 years of education.

Degrees in the fields of Arts, Science and Commerce are with the same years of academic study at a college or a university. Thus M.Sc., M.A. or M.Com degree is earned in 6 years after 10 years' schooling and M.Phil in 8 years' of education. There are 262 degree colleges throughout the country.

1.4.2 Development of science, technical and professional education

The general Universities when established invariably offered besides courses of Arts and Humanities, programmes pertaining to Science faculties. Thus courses comprising Economics, English, History, International Relations, Library Science, Philosophy, Psychology, Sociology Social Work, Islamic Studies, Languages, Political Science, Fine Arts, Journalism, Education and law, etc. were offered in the Arts faculties. The Science faculties offered courses in Physics, Chemistry, Zoology Botany, Geology, Mathematics, Biochemistry, Microbiology, Physiology, Genetics, Marine Biology, and Statistics, etc. A postgraduate Centre for Chemistry was established at Karachi under private sector for postgraduate work in Chemistry.

With the opening of the university departments, steps were taken to recruit suitable and qualified personnel to man various teaching and research positions. Also provision of libraries and laboratories was made as an essential element. In addition, adequate space facilities and equipments were arranged.

As a result of demand for new trends and practices of higher education, new curricula have been devised by the UGC in collaboration with scientists and experts. Thus college and univeristy level courses and syllabi are being reviewed, updated and reorganized continuously. For inservice and pre-service training of college and university teachers, for

reorientation in new methods and techniques of teaching and orienting them to new knowledge, understanding and skills, a National Academy of Higher Education has been established under the Administrative Control of the University Grants Commission, Islamabad.

In the field of technical education, besides four Engineering and Technology Universities and two Colleges of Engineering, facilities for training of graduate engineers exist at Institute of Chemical Engineering and Technology at the University of the Punjab; Engineering College Campus at Taxila, Institute of Textile Technology, Faisalabad; National College of Arts, Lahore and Agriculture Engineering Departments of the Agriculture Universities at Faisalabad, Tandojam and Peshawar. For the training of marine engineers, a Marine Academy has been established at Karachi under the Federal Ministry of Communications. Besides, eight colleges of Technology offering B. Tech. Degree programmes in addition to Polytechnic Diploma Courses have been set up.

Whereas the four Universities of Agriculture introduced besides sciences, the disciplines of horticulture, agricultural economics, animal husbandry, veterinary science, agriculture and applied agriculture, agricultural engineering and rural sociology, etc, the four Universities of Engineering and Technology offered besides sciences, the discipline of architecture, chemical engineering, civil engineering, electrical engineering, mechanical engineering, metallurgical and mining engineering, petroleum and gas engineering, town planning and electronomics, etc.

In the professional fields several university departments and colleges of commerce, medicine education, business administration, pharmacy, dental surgery, home-economics, etc. were established.

Sixteen medical colleges all over the country, have been opened which offer M.B.B.S. Degree programmes which are affiliated with their respective universities. There are also colleges of dental surgery offering B.D.S. Degree programmes. Jinnah Post-graduate Medical Centre for teaching and research in medical disciplines has been established at Karachi under the auspices of Federal Ministry of Health and governed by an autonomous Board of Governors.

1.4.3 Centres of Higher Education

Centres of Excellence and Area Study Centres have been established at various universities with the following objectives:

a) engage in goal-oriented high-level teaching and research,

b) train research workers,

c) establish M.Phil, Ph.D. and other programmes in the relevant disciplines in accordance with the standard and requirements of the university in which the Centre is established,

d) promote cooperation in inter-disciplinary relationship with other teaching and research establishment,

e) arrange conferences, seminars and refresher courses for the development of teaching and research, and

f) conduct teaching and research in such particular discipline as is assigned to it by the Federal Government in consultation with the University in which the Centre is established.

The following 7 Centres of Excellence have already been established for M.Phil, Ph.D and research programmes and production of trained manpower in the field.

1. Marine Biology at University of Karachi, Karachi.
2. Analytical Chemistry at University of Sind, Jamshoro.
3. Solid State Physics at University of the Punjab, Lahore.
4. Mineralogy at University of Baluchistan, Quetta.
5. Geology at University of Peshawar, Peshawar.
6. Physical Chemistry at University of Peshawar, Peshawar.

7. Water Resource and Management at University of Engineering and Technology, Lahore.

In addition to the Centres of Excellence, some new Research Centres have also been established in various fields of basic and social sciences in order to improve and provide more facilities for M.Phil, Ph.D and post-doctoral programmes and training courses. These include:

i) Centre for Molecular Biology: This Centre is based at the Punjab University. Keeping in view the nature of research, the Centre would function in collaboration with Department of Botany, Zoology and Bio-Chemistry, Centre of Excellence in Solid State Physics, Post-Graduate Medical Institute, Mayo Hospital and PCSIR Laboratories, etc.

ii) Centre for High Energy Physics: This Centre is also based at the Punjab University. The main objective of the Centre is to consolidate and promote research efforts in the field. Collaboration with Harvard University, USA have been established.

iii) Centre of Basic Sciences: This centre has been established under the aegis of University Grants Commission. It is a consortium of University Grants Commission, Pakistan Atomic Energy Commission, Pakistan Science Foundation, Pakistan Academy of Sciences and Pakistan Agriculture

Research Council, etc. The basic purpose of the Centre is to develop, promote and improve science education and research in the universities and other institutions of higher education and research.

iv) Computer Training Centre: A Computer Training Centre has been established at the University Grants Commission, Islamabad under the Centre of Basic Sciences. The major purpose of the Centre is to offer training facilities to the university teachers and employers of other research and development organizations in the field.

v) Centre of Social Sciences: This Centre has been established by the University Grants Commission in order to coordinate research activities of scholars with the needs of the policy makers and to strengthen the social Science departments in the univeristies.

vi) National Institute for Genetic Engineering: A project for the establishment of this Centre is under preparation. This Institution is being established in the country for research in the field.

vii) Industrial Liaison Cell: The Cell has been established at UGC with the main objectives of identifying potential areas of research and

professional requirements, to initiate contacts between industrial establishments and appropriate department of a university and to act as clearing house on information relating to facilities available in the universities, etc.

In order to promote detailed study of various contemporary societies particularly those of special interest to Pakistan, the following Area Study Centres for research and advanced study have been established in different universities of the country:-

1. South Asian Studies at University of the Punjab.
2. European Studies at University of Karachi.
3. Central Asian Studies at University of Peshawar.
4. Far-East South-East Studies at University of Sind.
5. Africa and North and South America at Quaid-i-Azam University.
6. Middle East and Arab Countries at University of Baluchistan.

For greater national cohesion and integration, it is of paramount importance that people of one region of the country understand the language and literature, social structure and customs of the people of other regions of the country. To achieve this objective, five Pakistan Study Centres at the university of the Punjab, Sind, Peshawar, Karachi and Baluchistan have been established for research and post-graduate studies of the language, literature and culture of the people of Pakistan. A National Institute of Pakistan Studies has also been established at the Quaid-i-Azam University, Islamabad.

2. SOCIAL DEMAND AND ECONOMIC CONSTRAINTS OF HIGHER EDUCATION

2.1 Social Demand for Higher Education

In Pakistani society, there is now a growing demand for education in general and higher education in particular. In urban areas there is shortage of government educational institutions with the result that private sector has become quite active in this field. However, it is quite at later stages that the students plan to pursue a more realistic goal of taking up education in Sciences, Arts, Commerce or Vocational domains. More demand for higher education has necessitated more facilities in the institutions of higher education.

In the field of higher education, the demand for more facilities was especially taken note of as this level of education was considered to be more significant in playing the role of a catalyst in the social, cultural, economic and political advancement of a society. The enrolment at college and university stages including professional institutions increased from 18512 in 1947-48 to 340,259 in 1979-80. This includes enrolment in colleges teaching undergraduate and graduate courses and in technical/professional colleges and universities. The number of universities increased from 2 in 1947 to 20 in 1982. The increase in the number of Arts and Science colleges, professional colleges and universities and the pattern of increase in their enrolment during the plan periods 1955 to 1982 are given in Table-1.

Table-1

NUMBER OF INSTITUTIONS AND THEIR ENROLMENT
DURING THE VARIOUS PLAN PERIODS FROM 1955-1982

Institution / year	Arts and Science Colleges		Professional Colleges		Universities	
	No.	Enrolment	No.	Enrolment	No.	Enrolment
1955-56	126	76,300	40	12,434	4	4092
1960-65	225	127,200	45	17,372	6	13221
1965-70	290	175,000	59	33,633	7	15475
1970-78	430	229,000	98	62,113	15	25526
1978-82	456	282,892	102	79,653	20	44060

The above figures indicates that while there was about 4 fold increase in the number of Arts and Science Colleges during 1955-82, the increase in professional colleges was 2½ times and the number of universities increased five times. Likewise, the enrolment in Arts and Science Colleges during 1955-82 increased about four times, as the enrolment increase in professional colleges and universities was 6½ and 11 times, respectively.

Social demand for higher education as indicated by enrolments in all universities (General & Technical) and separately for general universities and for technical universities at Bachelor's, Master's, M.Phil and Ph.D levels for the years 1971-72, 1981-82 and estimates for 1982-83 are given in Table-2.

Table-2

UNIVERSITY ENROLMENT DURING 1971-72 AND 1981-82 AT BACHELOR AND POST-GRADUATE LEVELS WITH PERCENTAGE RELATIVE

Universities and Levels	Enrolment		Percentage Relative		Estimated enrolment for
	1971-72	1981-82	1971-72	1981-82	1982-83
ALL UNIVERSITIES					
Bachelor	10,086	30060	100	298	33517
Master	7,946	13793	100	174	14565
M.Phil/Ph.D	216	848	100	393	972
Total:	18,248	44701	100	245	49054
GENERAL UNIVERSITIES					
Bachelor	6,345	16150	100	255	17749
Master	7,286	12364	100	170	13032
M.Phil/Ph.D	99	764	100	772	937
Total:	13,730	29278	100	213	31718
TECHNICAL UNIVERSITIES					
Bachelor	3,741	13910	100	372	15857
Master	660	1433	100	217	1549
M.Phil/Ph.D	117	84	100	72	81
Total:	4,518	15,427	100	341	17487

Figures in Table-2 show that during the ten year period 1971-81, total enrolment in all universities (General and Technical) rose

to 245 percent, in General Universities 213 percent and in Technical Universities by about 34 percent, considering 1971 as the base year.

Enrolment at Bachelor's level for all universities during the ten year period (1971-81) increased by three times, at Master's level it almost doubled and at M.Phil/Ph.D level the increase was by four times. In technical universities, the enrolment increased by almost four times at Bachelor's level and two times at Master's level but the enrolment at M.Phil/ Ph.D level dropped to two-third as compared to 1971-72 enrolment figures.

The development in higher education appears to be so high that of the total enrolment in the entire education system 4.2% are enrolled in colleges and universities. This is much higher as compared to many developing countries and even some developed countries of the world. But the basic education percentage of the relevant age group is practically lowest in the world.

Any-how, the growth of higher education has been rapid than in other sub-sectors of education. The number of institutions of higher education has grown by leaps and bounds. Table-3 shows the number of institutions at different levels of education and their comparative percentage increase between 1950 and 1978 with some estimates for the year 1983.

Table-3

NUMBER OF INSTITUTIONS AT VARIOUS LEVELS DURING 1950 AND 1978 AND THEIR PERCENTAGE INCREASE WITH ESTIMATES FOR 1983

Levels of Institutions	Number during 1950	1978	Percentage Increase	Estimated Number for 1983
Elementary school	11,545	58,879	410	78794
Secondary school	469	3,258	595	4869
Intermediate colleges	30	179	497	268
Degree colleges	26	261	904	596
Gen. universities	3	10	125	12*
Tech/professional universities	0	2	200	8*

* Actual figures.

This expansion, however, has been haphazard and has not taken into consideration the forces of supply and demand. The pyramid of education would have required a concomitant expansion of elementary and secondary education which did not take place, resulting in a number of imbalances.

2.2 Finaces for higher education

There has been quite liberal funding for higher education over the period of time. During the Second, Third and Fourth Plans the expenditure on universities, colleges and associated programme of foreign training, book banks and

scholarships amounted to appriximately 30%, 28% and 49% respectively of the total development expenditure in Education and Training. In fact, higher education was not given preferential treatment in various plans, but social demand and pressures for and heavily subsidization of higher education necessitated divergence of funds to higher education from other subsectors. This has, in the past, been forced by public demand for higher education especially in the urban areas. The public demand had been so heavy and pressing that the political and government apparatus went on approving opening of colleges without ensuring adequate balance among different streams. Thus, many more colleges teaching Arts and Humanities subjects were opened than were desirable at the cost of Science and Professional colleges. Entry into higher education has traditionally been neither restrictive nor selective, leading to an opendoor policy of admissions to universities. Any graduate could virtually find admission to an institution of higher education. This practice tended to lead to flooding of the departments dealing with Arts, Humanities and Literature. This is a luxury which places a heavy drain on the scarce resources. Pakistan can hardly afford to continue such a practice indefinitely. However this can only be controlled by providing alternatives and attractive streams of professional education.

The expenditure on education has increased considerably under the development and recurring heads. Table-4 shows the development expenditure having been increased

from Rs. 309.5 million in 1970-71 to Rs. 855 million in 1977-78 and to Rs. 1558.9 million in 1982-83. The recurring expenditure increased from Rs. 480.5 million in 1970-71 to Rs. 2445.7 million in 1977-78 and to Rs. 5911.7 in 1982-83.

Table-4

DEVELOPMENT, RECURRING AND TOTAL EXPENDITURE ON EDUCATION IN 1970-71, 1977-78 and 1980-83

Year	Expenditure (Million Rupees)		
	Development	Recurring	Total
1970-71	309.5	480.5	790.0
1977-78	855.0	2,445.7	3,300.9
1980-81	1240.5	3,378.6	4,619.1
1981-82	1687.4	3,914.6	5,602.0
1982-83	1588.9	5911.7	7,500.6

The total expenditure on education during 1980-81 was 540 percent of what was spent in 1970-71. The increase in development expenditure was 325 percent during the ten year period (1971-81), while recurring expenditure increased by 678 percent. Development expenditure during 1972-78 for college and university education (general and professional) was generally about 35% of all education development expenditure.

The expenditure on education was 1.7% of the GNP in 1971 and according to a World Bank Report the expenditure was 1.69% of the GNP in 1976. The GNP percent expenditure on education in Pakistan rose to nearly 2 in 1978. This was however much lower than what a typical Asian country was spending in 1976(3.04), a developing country (4.40%) and an OECD country (3.47%). At present it is about 1.5% of GNP in Pakistan.

The Fifth Five Year Plan (1978-83) had proposed that the per capita expenditure on education would have increased from Rs. 43/- in 1978 to Rs. 88/- in 1983 and envisaged an outlay of 3.1% of GNP on education by the end of the Plan. It was hoped that given better planning and management, the GNP percentage expenditure on education would exceed 3.1 by 1983. All indications show that the hope of raising GNP percent expenditure to 3.1 or higher have not materialized due to other demanding sectors in the budget.

The expenditure on higher education including technical, college and university education for the year 1970-71, 1977-78 and 1980-83 is given in Table-5.

Table-5

EXPENDITURE ON HIGHER EDUCATION DURING 1971,1978,1981-83

(Rs. in million)

Year	Technical* education	college** education	University education	Total
1970-71	81.9	45.3	92.0	219.2
1977-78	514.7	672.4	258.0	1445.1
1980-81	189.8	427.6	459.1	1076.5
1981-82	287.1	493.0	611.3	1391.4
1982-83	293.1	646.6	507.85	1447.5

* includes expenditure on professional education

** expenditure on Medical colleges is not included

Government total expenditure during 1982-83 on University education increased about 5.5 times, on college education 14 times and on technical education only 3.6 times the respective expenditure during 1970-71.

The above table shows that the total expenditure on higher education in 1982-83 was 660 percent of what was spent in 1970-71. Whereas, the percentage rise in Government total expenditure on education during the period 1971-83 was 950.

During 1980-81, 48 percent of total development expenditure on education was incurred on school (primary and secondary) education while 27 percent was spent on college (10%) and university (17%) education. For 1981-82, the development of school education was allocated 47 percent of the total expenditure on education under the Annual Development Plan(ADP) while 29 percent of total investment was allocated for the development of college (9%) and university (20%) education. The planned share of technical education in the 1980-81 ADP was reduced from 7 percent to 5 percent of the total development expenditure on education. During 1981-82, the share of expenditure on the development of education has been increased from 4.7% in 1980-81 to 5.7% in the overall public sector investment. Investment on Education during 1981-82 has been increased by 40 percent over the revised budget estimate of Rs. 1007.5 million for 1980-81. Allocation for university

education has been increased by 70 percent from Rs. 162.8 million in 1980-81 to Rs. 277.6 million in 1981-82 to bring about qualitative improvement in higher education and to meet the requirements of the four recently established Universities.

So while the demand for higher education will continue to escalate resulting in the need for ever-increasing expansion of facilities for higher education, the availability of funds in the sub-sector of higher education and resource constraint may curb the expansion. Thus the improvement and consolidation of the existing facilities for higher education may become the over-riding need at least for the next 4 to 5 years.

3. DISTRIBUTION TRENDS BY SEX, FACULTIES, PROVINCES/ REGIONS AND SOCIAL GROUPS IN HIGHER EDUCATION

Typical of a developing country, distribution of higher education in Pakistan is very uneven among male and female sections of the population and among different regions and social groups. This is apparent from the statistics collected over a period of time.

3.1 Sex-wise Distribution

The enrolment statistics, sex-wise, for the years 1971-72, 1981-82 and estimates for 1982-83 at various levels of higher education, taking all universities with break-up for general and technical universities are given in

Table-6. These enrolment figures show that higher education for males far exceeds the higher education for females. Enrolment of males in all the universities (General & Technical) during 1981-82 is about 8 times higher at Bachelor's level and about 3 times higher at Master's and Doctorate levels than that for females. While in General Universities, enrolment of males during 1981-82 is 4 time higher than that of females at Bachelor's level, it is 100 times higher than that of females at this level in technical universities. At Master's level in technical universities male enrolment is 23 times higher and at Doctorate level it is 63 times greater than that of females. This indicates a bias in favour of male higher education, in general, and male higher technical education, in particular.

TABLE-6

UNIVERSITY ENROLMENT (SEX-WISE) DURING 1971-72 AND 1981-82 WITH RELATIVE PERCENTAGE INCREASE FOR FEMALES

Levels	1971-72		1981-82		Percentage Relative(Female)		Estimated enrolment for 1982-83	
	Male	Female	Male	Female	71-72	81-82	Male	Female
ALL UNIVERSITIES							28668	3603
Bachelor	8,678	1408	25,734	3,312	100	235	10887	4098
Master	5,565	2381	1,0251	3,907	100	164		
Ph.D /M.Phil	186	30	621	206	100	687	700	250
GENERAL UNIVERSITIES								
Bachelor	4,951	1394	12,025	3,173	100	228	13119	3446
Master	4,910	2376	8,823	3,851	100	162	9344	4032
Ph.D /M.Phil	74	25	558	208	100	820	683	257
TECHNICAL UNIVERSITIES								
Bachelor	3,727	14	13,709	139	100	993	15628	175
Master	655	5	1328	56	100	1,120	1428	71
Ph.D /M.Phil	112	5	63	1	100	20	59	1.0

The enrolment figures for males during 1971-72 vis-a-vis females when compared with those during 1981-82 show that the male-female enrolment gap has widened with the passage of time during the last ten years (1971-82) and the bias in favour of male higher education has become greater in 1981-82 than that in 1971-72. This may partly be attributed to the fact that higher education of women remained a neglected field of educational planning in Pakistan. Also, it may be said that the situation has been caused by lack of provision of equal or equitable opportunities to women for acquiring higher education.

3.2 Faculty-wise distribution

The enrolment in different faculties in the universities during 1974-75 and 1981-82 has varied on one hand with the faculty and on the other with the location, type and size of the university. For convenience, the enrolment has been compiled for Arts, Science, Commerce, Professional, Engineering/Technological and Agriculture fields; the subjects of Pharmacy, Business Administration, Education Medicine, Home-economics and Law have been grouped under professional field.

Faculty-wise distribution of enrolments among various universities for the years 1974-75 and 1981-82 and estimates for 1982-83 are given in Table-7.

the disciplines in the faculty and their appeal to the students. It is evident that the enrolment in certain areas such as Science, Commerce, Professional disciplines, Engineering and Agriculture was proportionately much less than what it should have been affecting the output of graduates which was less than the desired number. Accordingly, there was an over-supply of graduates in Arts and Humanities. It can be safely inferred that the students find the easy way out by obtaining admission in the "soft" and "not-so-nasty" subjects to flood the market with manpower which may be qualified academically but not skilled professionally or vaocationally. Also the output of higher education would be scarce in areas where there was maximum need such as Science, Commerce, Technical and Professional fields.

During the Fifth Plan, emphasis in higher education was focussed on shifting enrolment from Arts (about 60% at degree level in 1977) to Science and Technical subjects (about 40% in 1977)

3.3 Province/region-wise distribution

Enrolment distribution in various university departments in the four provinces and Islamabad area with total for Pakistan during 1974-75 and 1981-82 is given in Table-8.

Data in Table-8 shows that during 1974-75 the most privileged province with the highest enrolment in the universities was the Punjab while the enrolment was the lowest in Baluchistan. However, enrolment in affiliated colleges and

TABLE-8

TOTAL ENROLMENT (BACHELORS LEVEL & BEYOND) IN THE UNIVERSITIES* WITH TOTAL ENROLMENT PROVINCE-WISE DURING 1974-75, AND 1981-82 AND ESTIMATES FOR 1982-83

Year / Province	1974-75	1981-82	Estimates for 1982-83
Punjab	11,964	17,202	18097
Sind	9,416	18,088	19861
NWFP	4,816	5,198	5255
Baluchistan	936	2,228	2522
Islamabad	863	918**	926
Total	27,995	43,636	46661

* Does not ihclude enrolment in Diploma/Certificate level courses.

** Does not include Open University.

hence total enrolment (52646) in Sind was higher than that for the Punjab.

If Punjab is divided in Lahore, Multan and Bahawalpur regions, Sind in Karachi and Hyderabad regions, NWFP in Peshawar and Dera Ismail Khan regions, region-wise enrolment (college and university level) for 1974-75 and 1981-82 are given in Table-9.

4. PARTICIPATION RATE

4.1 Participation rate in higher education

Participation rate of students in higher education in Pakistan is very small compared to that in many Asian countries. The absorption capacity of the graduates in the job market appears to be even smaller. As such the problem of unemployment and under-employment of graduates gets worse.

TABLE-9

ENROLMENT (BACHELORS LEVEL AND BEYOND) IN THE UNIVERSITIES AND THEIR CONSTITUENT AND AFFILIATED COLLEGES REGION-WISE DURING 1974-75 AND 1981-82

Province & Region	Year 1974-75	1981-82
PUNJAB	48813	12899
Lahore	40676	15857
Punjab University	34873	8665
University E & T*	2746	3900
Agriculture University	3057	3292
Multan	5856	1288
Bahawalpur	2281	754
SIND	52646	18479
Karachi	35665	11496
Karachi University	35665	8805
NED University E & T	-	2691
Hyderabad	16981	6983
Sind University	16981	2962
Mehran University	-	2281
Sind Agriculture University	-	1740
NWFP	8897	2884
Peshawar	7442	2046
Peshawar University	7442	980
NWFP University E & T	-	651
NWFP Agriculture University	-	415
D.I. Khan	1455	838
Gomal University	1455	838
BALUCHISTAN	2583	2268
Quetta	2583	2268
Baluchistan University	2583	2268
ISLAMABAD	863	918
Quaid-i-Azam University	863	918
Total:	113802	42448

* E & T= Engineering and Technology

Another important dimension of the problems of job market is the nonavailability of the requisite appropriate skills in the qualified graduates in certain areas of scientific, technological and professional education or the qualified graduates with the appropriate skills are not available in requisite numbers.

Heavy expenditure on higher education did not lead to the provision of the skills necessary for rapid economic development but was rather associated with an exceptionally high level of education unemployment. This may partly be a phenomenon of the fact that curricula and standards are largely unrelated to the realities of the labour market.

These problems add to the existing phenomenon of mismatch between "higher education" and the "world of work".

In Pakistan as in other developing countries, there exists an uneasy and rather tense relationship between the educational sector and economy and society. While, on one hand, requisite jobs are not available in sufficient numbers for the graduates dished out by the education machine, on the other the number of educated skilled graduates is in short supply to the potential employers. The phenomenon of the "educated unemployed" and the "educated un-skilled" has plagued the job market and hence the socio-economic and socio-cultural mileau.

Pakistan will have to initiate a two-pronged attack on higher education and in such a way that the university graduates possess the skills employers look for and enough jobs

are available for the qualified and skilled graduates. This would imply that on the one hand linkages of institutions of higher learning will have to be built with the industries, factories, commercial and banking establishments and all the relevant potential job markets in the field and on the other, advance manpower planning will have to be undertaken to foresee what manpower needs there will be in different areas of socio-economic life and to cater for those requirements.

5. CONCLUSIONS

Higher education in Pakistan has witnessed considerable improvements over the period of time. These improvements were mostly on quantitative side. However, the qualitative aspect has also gained some attention during the last decade or so. The centers of excellence have been established at various universities which, it is hoped, would contribute towards qualitative improvement of higher education in general and development of science, technical and professional education would go a long way towards achievement of national development objectives, in particular. Achievement of such objectives is always affected by the meagre resources allocated to education. Added to that is the increasing social demand for higher education. This demand is mostly in the area of Social Sciences which are flooded with students who after leaving the universities could contribute very little in the national development. However, the field of Engineering and Technology has enjoyed

100% increase during the last few years. This is a good indication for national development. But as far as university output in other major fields is concerned, it is not very much encouraging. Therefore, there is need to take some concrete steps to improve the qualitative aspect of university education. Like-wise measures must also be taken to match the educational offerings with the needs and requirements of the labour market which at the moment is a total mismatch resulting in frustration of qualified graduates who do not get proper jobs and of the employers who do not find employees fulfilling their job requirements. Therefore, it has become imperative that instead of opening new universities or university colleges, the existing universities and colleges of higher education must be consolidated and goal-oriented programme be developed and offered at the universities which could satisfy both the students and the labour market thus contributing effectively to the national development. In addition, more funds be allocated to this sector of education, since this is the most vital sector of education which contributes directly to the national development of a country.