

***DEVELOPMENT OF EDUCATION***  
***NATIONAL REPORT OF BANGLADESH***

***September 2004***

**Ministry of Education**

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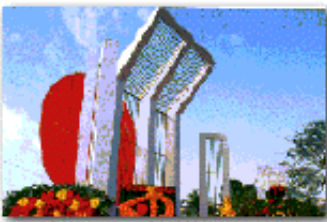
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## PART A. BANGLADESH: AN OVERVIEW

Bangladesh, a unitary and sovereign republic situated in the delta region with a long coastal belt, lies in the north-eastern part of South East Asia between 20<sup>o</sup>34' and 26<sup>o</sup>38' north latitude and between 88<sup>o</sup>01' and 92<sup>o</sup>41' east longitude. The country is bounded by India on the west, the north and the north-east, Burma on the south-east and the Bay of Bengal on the south. It has a total land area of 1,47,570 sq. km. It emerged as an independent nation on 26<sup>th</sup> March 1971. The capital of the republic is Dhaka. The total population is estimated at 130 million. The citizen of Bangladesh is known as Bangladeshi.



### ***Historical Background***



The territory constituting Bangladesh was under the Muslim rule for over five and a half centuries from 1201 to 1757 A.D. Subsequently, it came under the colonial rule of the British after defeat of the last sovereign ruler, Nawab Sirajuddowala in 1757. The British ruled over the entire Indian sub-continent including this territory for nearly 190 years from 1757-1947. During that period

Bangladesh was a part of the British Indian provinces of Bengal and Assam. With the end of the British rule in 1947, the sub-continent was partitioned into two independent countries, India and Pakistan. Bangladesh became one of the provinces of Pakistan and was named as East Pakistan. Geographically the two parts (East & West) were separated by a long distance of about 2500 kilometer. Most importantly, they had different languages, cultures and traditions. Economic disparity, extraction of wealth and socio-political repression made the East very discontented. Starting from the language movement in the year 1952 to establish Bengali as a national language, the people of East Pakistan had struggled hard for democracy and autonomy, which turned into a war of liberation in 1971. After a protracted nine months long war, Bangladesh finally achieved her independence.

### ***Topography***

Bangladesh is mainly a flat plain, traversed by many rivers and streams. The principal rivers are the *Padma, Jamuna, Meghna, Brahmaputra, Teesta, Surma, Karnafuli*. But the riverine system consists of nearly 57 small and large rivers, originating and flowing through India. Heavy silts deposited by these rivers in the rainy season continuously enrich the alluvial soils but also contributes to periodic heavy floods. There are no deserts in Bangladesh, but there are swamps, marshes and forests. The Chittagong Hill Tracts in the South-East of Bangladesh constitutes the areas with highest altitude.

### ***Climate***

Bangladesh has a sub-tropical monsoon climate. While there are six distinct but overlapping seasons in a year, the three dominant seasons are summer (April-June), monsoon (July-October) and winter (November-February). The maximum temperature recorded in summer is 36<sup>o</sup> Celsius (98<sup>o</sup>F). The average temperature across the country usually ranges between 11<sup>o</sup>C and 29<sup>o</sup>C in winter. Monsoon rains cause widespread flooding, leading to great damages to people's life, home and crops.

### ***Language***

Bangla is the official language but English is widely spoken. Bangla has been given the status of one of the official languages of United Nations Educational, Scientific and Cultural Organization (UNESCO). In recognition of the martyrs who gave their lives on February 21, 1952 for establishing Bangla as a state language of Pakistan, UNESCO has declared this day as the International Mother Language Day.

### ***Religion***

Nearly 90% of the population are Muslims. Other than Muslims, the other religious communities are Hindus, Buddhists and Christians. The Muslim majority in Bangladesh are fully respectful of the other faiths and beliefs, and Bangladesh is known for its communal harmony. There are some tribal areas in different parts of the country where the inhabitants have their own languages, cultures and traditions. The government actively protects and nurtures these cultural diversities.

### ***Administrative Setup***



*National Parliament Building*

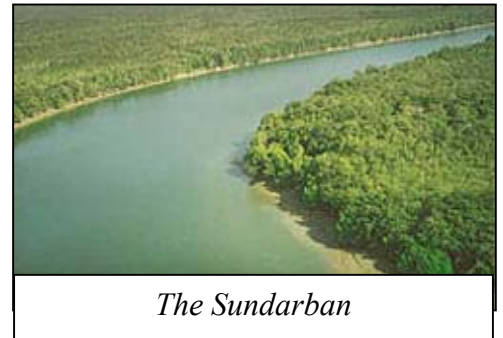
Bangladesh is governed under a West Minister style parliamentary form of government. The Republic comprises of three basic organs: 1) The Legislature, 2) The Judiciary and the 3) The Executive. It has a unicameral legislature consisting of 300 directly elected (men and women) and 45 indirectly elected women members, called members of Parliament. The Prime Minister, who commands the support of the majority of the MPs, is the head of the government and chief executive of the country. Members of Parliament elect a President as the head of the state. The roles and functions of the President and the Prime Minister are defined by the Constitution of the Republic. Bangladesh has the unique distinction of having two distinguished women parliamentarians as Prime Minister and leader of the Opposition since 1991.

### ***People, Culture and Resources***

Tradition and harmony mark the social life in Bangladesh. Nearly 80% of the population lives in the rural areas, thus making Bangladesh a predominantly rural country. Rivers play an important role in the life, livelihood and culture of the people. Rice and fish constitute an average Bangladeshi's principal diet. Agriculture is the main occupation of the people employing nearly 70% of the labor force, and contributing 25% of the GDP. Rice, wheat, jute, summer and winter vegetables, sugarcane, tobacco, oilseeds, pulses and potatoes are the principal crops. Jute, tea and hides and skins are the traditional exports. But these have been largely overtaken by the exports of fisheries produce, readymade garments and finished leather goods. Remittances by overseas workers are the single most important foreign exchange earnings of the country.

### ***Tourist Attractions***

Bangladesh is endowed with enchanting scenic beauty, mighty rivers, sunny beaches, historical relics and colorful tribal life. Dhaka, the capital city founded by the *Mughals* in 1608, with its ancient *monuments* and *forts* belonging to the Mughal period, and hundreds of mosques provide a unique opportunity for a convenient journey through the past. Other notable tourist attractions include *Sonargaon* (near Dhaka) which once was the capital of Bengal, bears the memories of the rich heritage belonging to *Pre-Mughal* era. *Mainamati*, *Paharpur* and *Mahasthan* are important centers of Buddhist culture. *Chittagong*, the second largest city and sea port, *Kaptai* and *Rangamati* are located in the picturesque lush green hilly areas. The world's *longest beach* at Cox's Bazar with miles of golden sands and rare conch shells is one of the most attractive tourist spots in the country. The 'tea' growing areas in Sylhet, spread like a green carpet over the sloping hills quite pleasantly breaks the monotony of the flatness the country. Sundarbans, the mangrove forests located in the south east part of Bangladesh, is the home of Royal Bengal Tiger and the lively spotted deer and is a heaven for eco-tourists.



### ***Fundamental Principles of State Policy***

The cornerstones of state policies and programs are :

- Absolute trust and faith in Almighty Allah as the basis of all actions
- Democracy, human rights and an exploitation free society
- Priority on poverty alleviation
- Mainstreaming of women in all aspects of national life
- Free and compulsory primary education
- Free education for girls up to higher secondary levels eight in all rural areas
- Promotion of family planning, mother and child health care
- Promotion of regional cooperation in the South Asian region through SAARC

### ***Socio-Economic Indicators of Bangladesh***

Item		Earlier Year	Latest Year
1	Real GDP Growth	4.9 (FY 1995)	5.3 (FY 2003)
2	GDP per Capita (\$, current)	316 (FY 1995)	375 (FY 2003)
3	Total Population (million)	110 (1990)	130 (2001)
4	Annual Population Growth Rate	1.9 (1990)	1.5 (2001)
5	Total fertility rate	4.3 (1990)	2.5 (2000)
7	Infant Mortality Rate (Below 1 year per 1,000 live birth)	94 (1990)	51 (2000)
9	Life Expectancy at Birth (years)	57 (1990)	62 (2000)
10	Adult Literacy (%)	37 (1990)	65 (2000)
11	Primary School Enrollment (NER)	77 (1990)	97 (2002)
12	Secondary School Enrollment (% of school age group)	19 (1990)	33 (2001)
13	Public Expenditure for education (% of GDP)	1.4 (1990)	2.2 (2000)
14	Population below National Poverty Line (%)	51 (1995)	49 (2000)
15	Human Development Index	0.4 (1990)	0.5 (1999)
16	Human Development Ranking	147 (1990)	132 (1997)
17	Human Poverty Index	46 (1995)	35 (2000)
18	Human Poverty Ranking	65 (1995)	73 (1999)
FY = fiscal year (July-June), GDP = Gross Domestic Product			
Sources: Asian Development Bank. 2001 and 2002. Bangladesh: Country Strategy and Program Update. Manila., BANBIES, MoE, 2003.			

### ***The Macroeconomic Scenario: Major Achievements***

Over the last decade, Bangladesh has achieved notable progress toward poverty reduction. Substantial progress has been made in key areas of human development, particularly in improving life expectancy, literacy, and health indicators, and in promoting gender equity. Unlike many other developing countries, the economic performance of Bangladesh in the past few years has been strong. GDP growth rate exceeded five percent per annum (due mainly to improved performance in the agriculture sector), investment rates are high, public spending on social sectors has increased resulting in continuous reduction of poverty levels. Major achievements include increase in per capita income, reduction in population growth rate, decrease in infant and child mortality rate, improvement in child and maternal nutrition status. Most notably, Bangladesh has one of the most successful population programs in South Asia. The annual population growth rate declined from 1.9% in 1990 to 1.5% in 2001. Bangladesh is overcoming the shadow of famine with substantial reduction in chronic food shortage and insecurity, and enhanced capacity for disaster management.

The government has taken pragmatic steps to stabilize the macroeconomic environment and improve governance. An Interim *Poverty Reduction Strategy Paper* (I-PRSP) was prepared and finalization of PRSP is underway.

### ***Bangladesh Dealing Successfully with Major Challenges***

- Per capita income growth in the 1990s (3%) substantially above the average for low income countries (1%)
- Bangladesh's volatility of growth among the lowest in the world, and inflation rate low-with beneficial impact on poverty reduction.
- Lowest inequality (Gini index) in SAR
- Growth rate of investment is highest in the region, and absolute level is approaching regional norms
- Bangladesh's achievements stand out in "hard" sectors also
- Power sector system loss is lower than in most Indian states, lower than in Pakistan and Sri Lanka.
- Power tariffs closer to cost recovery than India, Pakistan, Sri Lanka and Nepal.

<b>Indicators</b>	<b>Bangladesh</b>	<b>India</b>	<b>Nepal</b>	<b>Pakistan</b>	<b>Sri-Lanka</b>
	23	24.2	25.7	1.6	26.5
Investment Growth Rate (1990-2001)	9.1	7.7	.....	2	5.7
Volatility of Growth (1981-2000)	1.1	2	2.7	33	1.4
Inequality (Gini Index 2000)	31.8	37.8	36.7	23	34.4
Military Exp. as % total Exp. (2001)	11.2	14	6.5		14.7

### ***Human Resource Development***

Increasing access to education with equity and quality is a precondition to human resource development, which in turn paves the way to poverty reduction. In order to remove poverty as a barrier to access to basic education, primary education has been made free and compulsory. Dramatic improvement has also occurred in student enrolment at both primary and secondary levels, reduction of gender inequality in education. Increased public education expenditure as a percentage of GDP rose from 1.9% in 1990 to 2.7% in 2000. Concerted efforts in collaboration with development partners led to significant improvement in the adult literacy rate-from 37% in 1990 to 62% in 2001. Various government interventions and NGO programs raised Bangladesh's development ranking from 147 in 1990 to 132 in 1999. However, most of the above-mentioned successes are vulnerable to external and internal shocks and need to be consolidated.

## **PART B The Education System of Bangladesh: Major Reforms and Innovations**

### ***(a) The Legal Framework and focus of Government on Education***

#### **The Legal Framework**

The Constitution of the People's Republic of Bangladesh enjoins upon the Government of Bangladesh the obligation to ensure literacy of all the citizens of the country within the shortest possible time through the following provisions. The Constitution mandates the state to adopt effective measures for the purpose of:

- establishing a uniform, mass-oriented and universal system of education and extending free and compulsory education to all children to such stage as may be determined by law (article 17).
- relating education to the needs of society and producing properly trained and motivated citizens to serve those needs (article 17).
- removing illiteracy within such time as may be determined by law(article 17).

#### ***International Commitment***

Bangladesh is a signatory to the Declaration at the *World Conference on Education for All* (WCEFA) held in March 1990 in Jomtein, Thailand. The Government reiterated its commitments in the World Summit for Children held in New York in September 1990, and in the summit of the Nine High Population Countries held in Delhi in December 1993. The same commitment was reiterated in the EFA ministerial review meeting of Indonesia held in September 1995, Pakistan in September 1997, and China in August 2001. Bangladesh also participated in many seminars and workshops held on Education for All (EFA). The Government of Bangladesh has made commitments in the *World Education Forum (Dakar, April 2000)* towards achievement of Education For All goals and targets for every citizen by the year 2015.

Pursuant to its constitutional obligations and international commitments, the government is determined to ensure Education for All in the shortest possible time. Bangladesh took active measures for accelerating its primary education program in the light of global awareness in the education sector as well as its national goals. These include:

- I. Enactment of Compulsory Primary Education Act in 1990
- II. Creation of a separate Primary and Mass Education Division in 1992. It has recently been upgraded as a Ministry of Primary and Mass Education in 2003.
- III. Introduction of compulsory primary education program in 68 Upazillas in 1992 and expansion of this program all over the country in 1993
- IV. Formulation of a National Plan of Action (NPA) in the light of World Conference on Education for All in 2000.
- V. Successive implementations of development projects to achieve the objective of primary education.

As a follow up of ECEFA Bangladesh prepared a realistic National Plan of Action for EFA by 2000. Government Commitments for EFA by 2000 were:

- *Increase gross enrolment at the primary level to 95% by the year 2000.*
- *Increase completion rate at the primary level to 70% by 2000.*
- *Increase the rate of literacy to 62% by 2000.*

### **Focus of Government on Education**

The focus of government on education as enunciated in different policies and Five Year Plan documents are:

- Providing value based education
- Emphasis on job-oriented and need-based education
- Modernization of curriculum
- Ensuring efficient management at all levels
- Strengthening the Information and Communication Technology
- Ensuring teacher effectiveness at all levels
- Revitalizing technical and vocational education
- Ensuring gender parity at all levels of education

### ***(b) Organization and Management of Education***

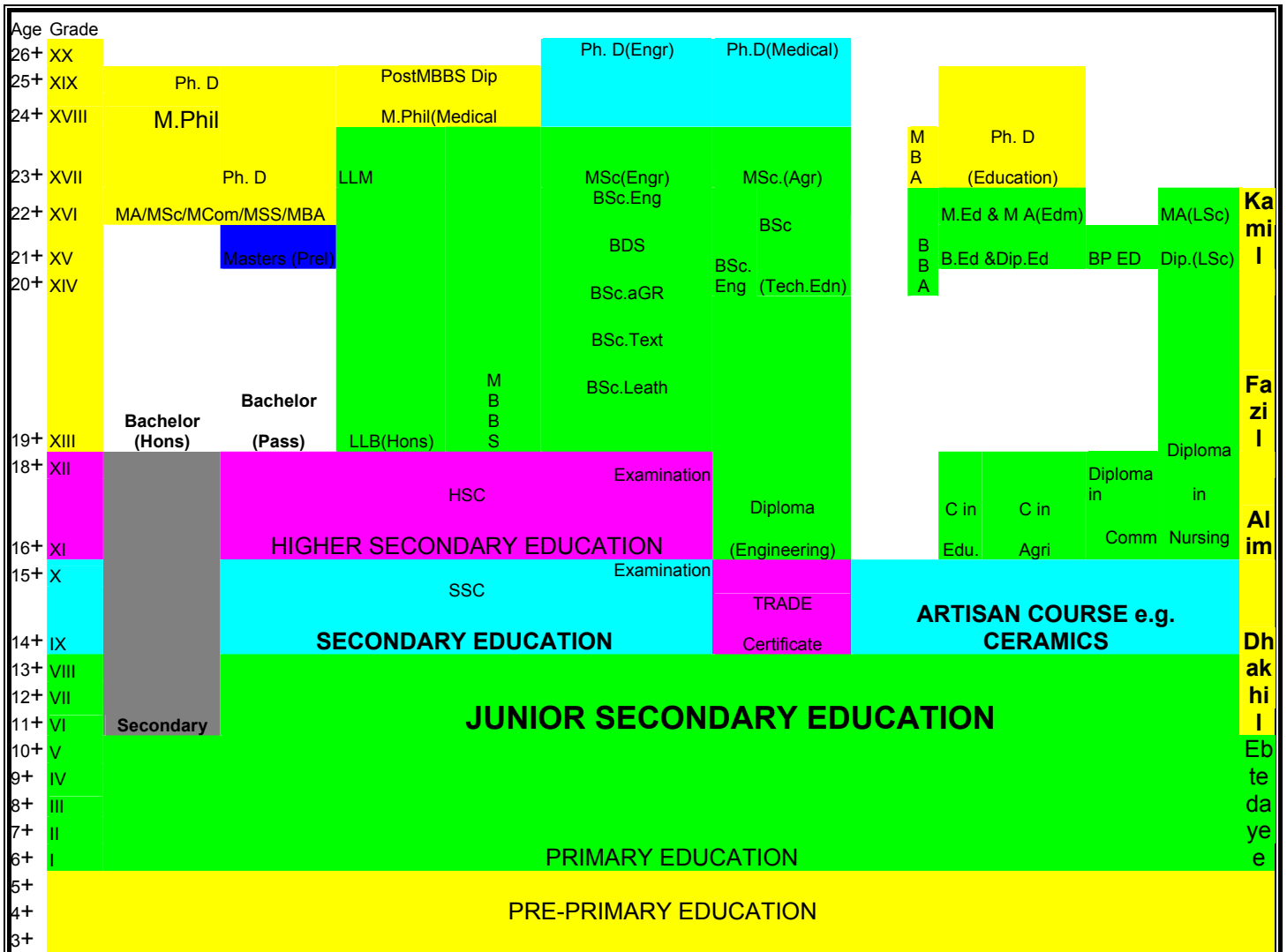
#### **Organization**

##### ***Structure of Education***

Education in Bangladesh has three major stages-, *primary, secondary and higher education*. Primary education is a 5-year cycle while secondary education is a 7 year one with three sub-stages: 3 years of junior secondary, 2 years of secondary and 2 years of higher secondary. The entry age for primary is 6 years. The junior secondary, secondary and higher secondary stages are designed for age groups 1-13, 14-15 and 16-17 years. Higher secondary is followed by baccalaureate level education in general, technical, technology and medical streams requiring 5-6 years to obtain a Master's degree.

In the general education stream, higher secondary is followed by college/university level education through the Pass/Honors Bachelor Degree Courses (3/4 years). The Master's Degree is of one year's duration for holders of Bachelor Degree (Honors) and two years duration for holders of (Pass) Bachelor Degree. Higher education in the technical area also starts after higher secondary level. Engineering, agriculture, business, medical and Information & Communication are the major technical and technological education areas. In each of the courses of study, except for medical education, students are required to complete a 4-year course work while for medical education, a 5-year course of study is required for the first degree.

## Present Educational Structure of Bangladesh



Source: Bangladesh Bureau of Educational Information and Statistics (BAIBEIS), 1999

### Streams in Education

Primary level education is provided under two major institutional arrangements (stream) *general & madrasa*, while secondary education has three major streams: general, technical-vocational and madrasa. Higher education, likewise, has 3 streams: general (inclusive of pure and applied science, arts, business and social science), madrasa and technology education. Technology education, in its turn, includes. agriculture, engineering, medical, textile, leather technology and ICT. Madrasahs (Arabic for educational institution), functioning parallel to the three major stages, have similar core courses as in the general stream (primary, secondary and post-secondary) but have additional emphasis on religious studies.

## **Management of Education**

The education system of Bangladesh functions under two separate ministries: Ministry of Primary and Mass Education (MoPME) responsible for Primary and Mass Education, and the Ministry of Education (MoE) responsible for post primary and post secondary levels of educations.

### ***Primary Education***

There are 3 main types of primary level institutions in the country. These are (i) government primary schools (owned, funded and managed by the government) (ii) partially publicly funded non-government primary schools and (iii) wholly privately funded primary schools. This 3rd category encompasses the following types:

(a) non-government non-registered (not registered with MoPME but is under the process of registration; managed by the School Management Committee (b) ebtedayee Madrasha (primary level non-government institutions imparting religious education) (c) ebtedayee madrasha attached to dakhil madrasha (dakhil madrasahs are non govt. educational institutions imparting madrasa education at the secondary level having a curriculum different from that taught in the mainstream) (d) secondary school attached primary sections (e) NGO schools (e.g BRAC schools, Gana Sahajya Sangstha schools) (f) Satellite school (schools containing only grade 1 and 2. These schools are established in villages where there is no primary school. Pupils studying in these schools go to the primary schools of the nearest village after completing grade 2. These are non-governmental schools) (g) Community school (one-teacher school run and funded by the community) (h) kindergartens (English medium schools completely privately owned and managed) (i) experimental schools (schools attached to the Primary Teacher Training Institutes where the trainee teachers go for practice teaching)

The total number of institutions, teachers and pupils in the primary education sub-sector are presented in the table below:

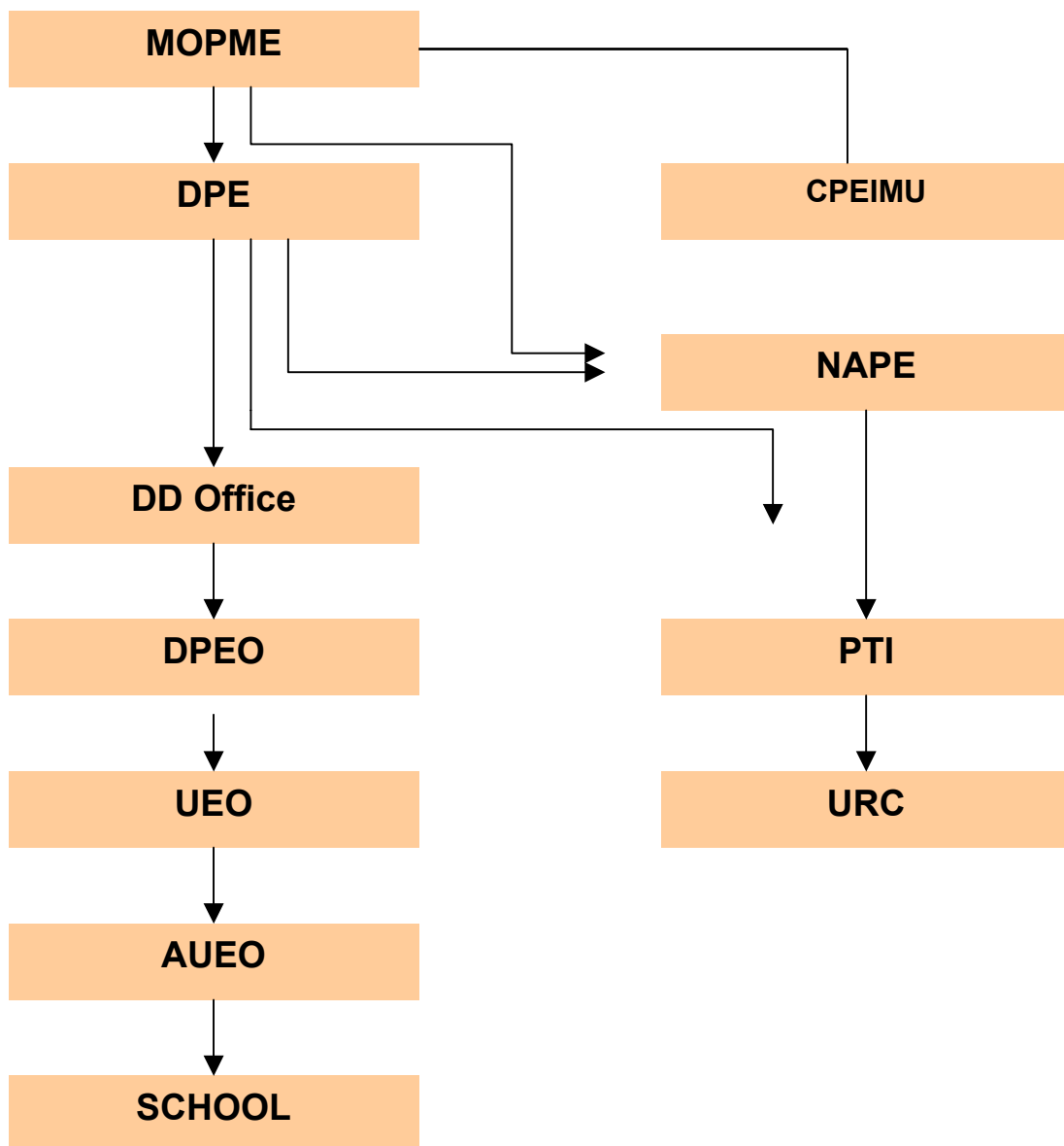
**Table -1**  
**Number of Primary schools, teachers and pupils, 2002**

Type of schools	Number of Schools	Number of Teachers	Number of Pupils
Government	37671	157236	10669819
Non-government primary school & other primary level institutions	40692	157819	6892009
Total	78363	315055	17561828

Source: BANBEIS, MOE, 2003

The MoPME is the apex body for formulating overall policies and programs for Primary and Mass Education and for their implementation. Assisted by an advisor of the rank of a State Minister, the Honorable Prime Minister is the minister in-charge of Primary and Mass Education. The administrative head of the MoPME is a Secretary. The MoPME has a Directorate of Primary Education (DPE), headed by a Director General (DG) with functional sections headed by 04 Directors at the headquarters. The DPE's functions are decentralized at the different tiers of administration e.g division, district and upazila (sub-district). At the field levels, the key officers are Deputy Directors (divisional/regional level), District Primary Education Officers (at the districts) and Upazila Education Officers and Assistant Upazila Education Officers (at the sub-district levels). Pre- and in-service training of primary school teachers are conducted at the National Academy for Primary Education (NAPE) and at a number of Primary Training Institutes (PTI) and Upazilla Resource Centers. National Curriculum and Textbook Board (NCTB), is responsible for curriculum development, textbook approval, printing and distribution. An important feature of public sector support for primary education is the free provision of all textbooks for the students at the registered primary schools and *ebtedayee* madrashas.

**Management Structure of Primary Education**



<b>MOPME</b>	Ministry of Primary and Mass Education
<b>DPE</b>	Directorate of Primary Education
<b>CPEIMU</b>	Compulsory Primary Education Implementation Monitoring Unit
<b>NAPE</b>	National academy for Primary Education
<b>DD Office</b>	Office of the Deputy Director
<b>DPEO</b>	District Primary Education Office
<b>UEO</b>	Upazila Education Office
<b>AUEO</b>	Assistant Upazila Education Officer
<b>URC</b>	Upazila Resource Centre

### ***Learner Evaluation***

At the *primary* level, there is the system of Continuous Pupil Assessment (CPA), for the grades 1-3. At the end of grade 3 & 4, there are annual examinations through which learners are promoted to the-next grade. At the end of the primary cycle, that is, at the end of grade V, there are school-leaving examinations and the successful students are awarded school-leaving certificates by the concerned school. There is no public examination at the end of the primary cycle, although examinations are held for awarding merit-based Scholarships. This examination is participated by only the best 20% of the pupils of each primary school. The successful learners are awarded scholarships up to the junior secondary level. The Primary Scholarship Examinations are conducted and managed by the Directorate of Primary Education (DPE). Nearly 38% of the primary school teachers are women, compared to 6% in 1980, 21% in 1990 and 30% in 2000.

### ***Secondary Education***

#### ***Types of Institutions***

Post-primary education in the general stream is imparted by junior secondary schools (grade 6-8), senior secondary schools (grade 6-10) and higher secondary schools, known as Intermediate colleges (grade 11-12). Many higher secondary schools also offer courses leading to Baccalaureate degrees in liberal arts and sciences. Institutions containing grades 1- 12 (primary to higher secondary) are few in number. Post primary level madrasahs are known as *Dakhil madrasa* (grades 6-10), *Alim madrasahs* (grades 11-12).

At the secondary level there is a separate stream for imparting *technical-vocational* education and training. After completing the junior secondary level, students may enter into Vocational Training Institutes for 2-year SSC (vocational) courses and after having SSC Vocational/SSC (science) they may enter into Vocational Training Institutes (VTI), Polytechnic Institutes for 2-year HSC (Vocational)/ 3-year Dip-in-Engineering courses.

In terms of ownership and management of secondary schools, there are two major types: government secondary schools and non-government secondary schools (including *Dakhil madrasahs*). Nearly 98% of the post primary (secondary and higher secondary) institutions are owned and managed by private sector. However, these institutions are private only in name because 90% of their salaries and wages, and the costs of their physical infrastructure development, durable educational supplies and equipment are provided by government.

***Number of Institutions, teachers and pupils at the secondary level***

The number of secondary level educational institutions, teachers and pupils are presented in the table below:

**Table-2**  
**Number of education institutions, teachers and students by education streams**  
**(Post primary)**

Type of schools based on streams	No. of Inst.	No. of Teachers	Enrolment
Secondary (general)	16562	186949	8162134
Madrasah	5536	70247	2168441
Technical/Vocational	1562	8623	134016
Total	23660	265819	10464591

Source: Pocket Book on Educational Statistics, BANBEIS, 2003

Technical and vocational forms an important stream of secondary education. The institutions in this stream include Polytechnics, VTI, Commercial institutes, Technical Training Center, Textile Vocational Center, Agriculture Training Institute and others.

***Management***

The MoE is the apex body for policy, planning and program formulation relevant to the secondary, higher secondary and post secondary higher education, as well as for the implementation of these policies and programs. The MoE is headed by a Minister. The Ministry executes its functions through its Secretariat, which is headed by the Education Secretary, a Directorate of Secondary and Higher Education (DSHE), a Directorate of Technical Education (DTE), headed by Director Generals, and nine autonomous Education Boards (headed by Chairpersons). There is also a Directorate of Inspection and Audit (DIA), which has the responsibilities for conducting financial and management audits of the schools. These entities form the core of the administrative structure for the management of post -primary education.

The Directorates are responsible for (i) project planning and implementation (ii) payment of salary subvention to teachers and employees of the non-government secondary schools and higher secondary institutions (iii) teacher and employee management i.e. recruitment, appointment, transfer & promotion of teachers and non-teaching staff for government schools, (iv) overall responsibility for ensuring quality and "enforcement of academic standards of secondary and higher education".

The DSHE is headed by a Director General who is assisted by 04 Directors and a number of other officials at the center, zones and districts. The country has been divided into 9 educational zones for effective management of secondary education at the field level. Under these zones there are 64 District Education Officers (DEOs) and equal number of Assistant District Education Officers (ADEOs) to monitor and supervise the secondary schools.

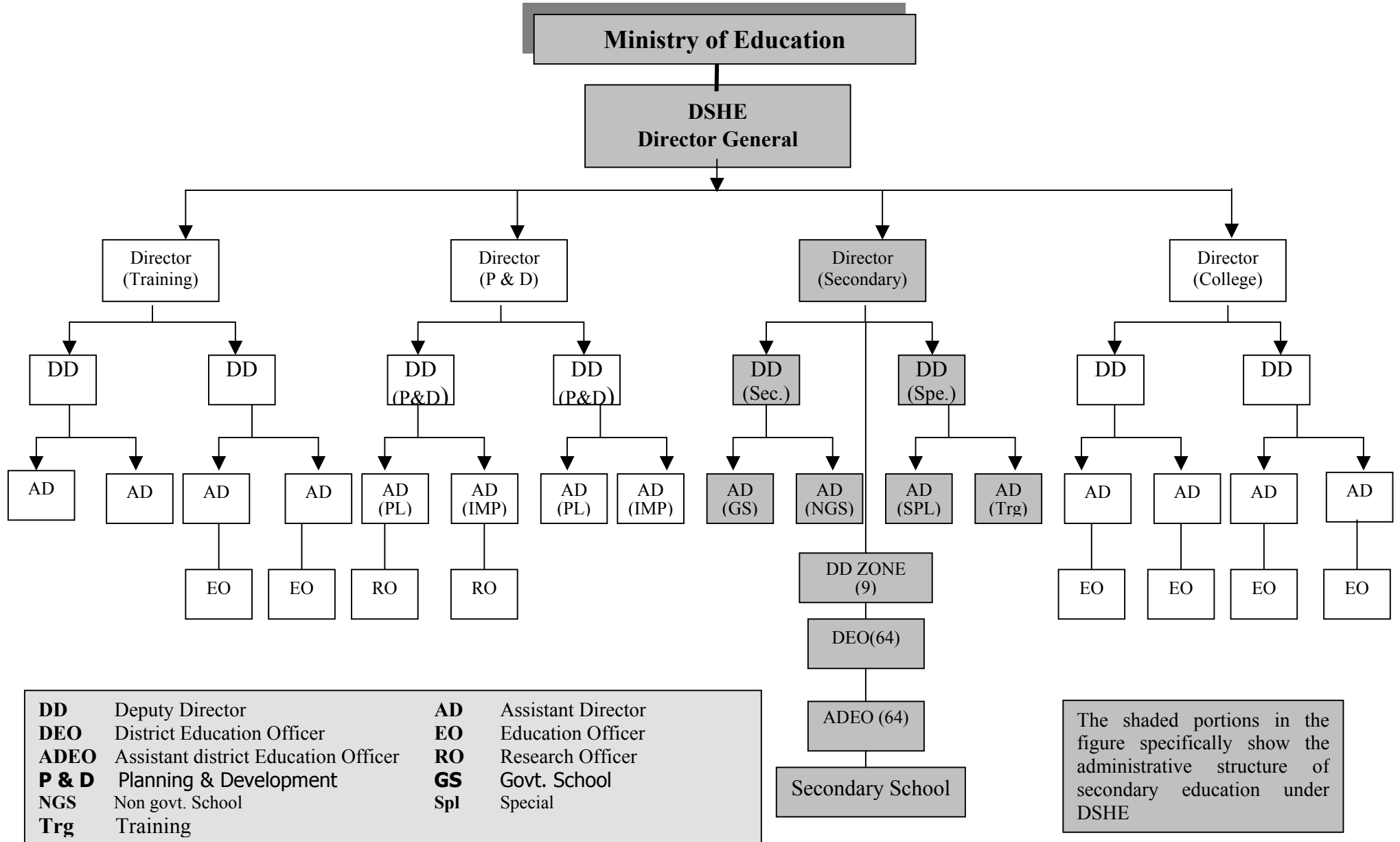
There are seven Boards of Intermediate and Secondary Education (BISE), one Madrasha Education Board (MEB), and one Technical Education Board (TEB). These Boards are responsible for accreditation of non-government secondary education institutions, supervision for quality assurance and administration of public examination at the secondary (Secondary School Certificate) and higher secondary (Higher Secondary Certificate Examination) levels. These Boards are autonomous bodies.

As in the case of primary education, the National Curriculum and Textbook Board (NCTB) is responsible for the formulation of curricula and approval and publication of textbooks for the secondary and higher secondary schools. However, unlike textbooks at the primary level, textbooks are not provided free of cost to secondary and higher secondary students. The organization and functions of the NCTB are in the process of being changed in order for them to focus more on curriculum and textbook development, progressively delving the responsibilities for textbook publication and distribution to the private sector.

Then there is an apex institution responsible for extending training and research Support to the teachers and education functionaries. This is the National Academy for Educational Management (NAEM) for secondary and higher education sub-sectors.

One important feature of the management of non-government primary and secondary schools is the school-based management through the School Managing Committees (SMC). These Committees are responsible for all management issues in the schools excepting the academic matters. Head teacher is the academic head of the school and is the Member Secretary of the Managing Committee while there are teacher representatives and people from the community as members on the Committee. This management structure was designed to ensure community participation in the management of schools. However, experiences to-date point to a number of inefficiencies in this mode of school management and the composition and functioning of the SMCs are being changed.

## Management Structure of Secondary and Higher Education



### ***Learner Evaluation***

At the *junior secondary* level also, there is no general public examination. But, as mentioned earlier, there is a Junior Scholarship Examination, which is participated by the best students of grade 8. The successful pupils are awarded junior scholarship up to the secondary level. From grade 6 through 12, the learners have to sit for 3 terminal examinations in each grade for their internal evaluation. These examinations are organized, conducted and controlled by the concerned schools according to the instructions set by the Education Boards. But the rigor with which these internal evaluations take place are open to question in respect of most of the schools, particularly in the rural and far flung areas. In order to strengthen learner evaluation, prior to their partaking at the SSC examination (see below), locally administered public examination of limited scope at the 6th and 8th grades are being piloted.

The most important public examination takes place at the end of grade 10, i.e. the secondary level, entitled the "Secondary School Certificate" (SSC) Examination. This is a countrywide examination, with nearly a million examinees participating. All grade 10 completers have to sit for this examination to get the level-completion certificate and qualify them selves to enter the higher secondary stream

Secondary level education is followed by a 2-year Higher Secondary Course, upon completion of which students sit for a Public Examination for obtaining the "Higher Secondary Certificate" (HSC). Both the SSC and HSC examinations are organized, conducted and controlled by the respective Education Boards.

For Madrasha students, the parallel for SSC is known as Dakhil, and for HSC it is known Alim examination and certificate.

### ***Tertiary Education***

Tertiary education, meant and designed for the post higher secondary (18-23 age group) students comprise a 3-year Pass course or a 4-year honors course (in the general stream) for Baccalaureate Degree followed by a 2-year and 1-year Master's course for pass graduates and honors graduates, respectively. Except for studies in the field of medicine, which requires the completion of a 5-year course of study for graduation, Baccalaureate degrees in the fields of engineering, agriculture, textile and leather technology require the completion of 4-year courses of studies.

### ***Types and number of institutions***

Tertiary education is imparted by

- 21 public and 54 private universities,
- 2600 degree colleges (pass, honors and masters) affiliated with the National University,
- 5 regional Engineering Universities,
- 12 government and 14 private medical colleges, and by the
- Bangladesh Open University through its distance learning programs.

The agency responsible for the guidance and oversight of the academic programs and management of the university level institutions is the University Grants Commission (UGC). The UGC also acts as the agency for channeling government subventions to the public universities, and for recommending the approval of prospective public universities. It is an autonomous entity headed by a chairman.

### ***Learner evaluation***

At the *tertiary level*, student evaluation is through centrally held public examinations under the aegis of the concerned universities. For the students of the affiliated degree colleges, examinations for the pass, honors & masters degrees are managed and administered by the National University.

### **(c) Teacher Education**

There are several institutions for imparting education and training leading to the award of non-Baccalaureate certificates as well as degrees for teachers at different levels of the education system. There are 54 public sector Primary Training Institutes (PTIs) which offer 1-year Certificate in Education (C-in-Ed) course for the teachers at the primary schools. There are 11 public and 54 private sector Teacher Training Colleges (TTC) offering 1-year Bachelor of Education (B.Ed.) courses and 1-year M.Ed Courses for the teachers of the secondary level schools. Bangladesh Open University (BOU) also offers B.Ed. course through distance education mode. The Institute of Education & Research (IER) of Dhaka University offers 4- year courses leading Baccalaureate degree with honors in education, followed by 1-year Master of Education course, as well post-graduate studies leading to M.Phil and Ph.D in Education. Higher Secondary Teachers Training Institutes (HSTTIs) conduct in-service training for both the secondary school and college teachers. For the technical-vocational stream, there are Vocational Teacher Training Institutes (VTTIs) offering 1-year courses for the teachers of VTIs. There is also a Technical Teachers' Training College (TTTC) which conduct training Courses for the teachers of Polytechnic Institutes.

#### **(d) Non-formal Education**

One of the important educational goals of the government of Bangladesh is to ensure 100% literacy within the shortest possible time. Towards that end, government has undertaken a number of projects and programs, funded with its own resources as well from the development partners, for enhancing adult literacy and mass education in the non-formal mode. The past interventions are being evaluated for their effectiveness and the activities are being reformulated to ensure a more appropriate delivery mechanism.

#### **(e) Financing of Education**

The allocations made for education in the 5-year Development Plans undertaken during the period 1973-2002 shows a fluctuating trend, ranging between 3.5% and 7% of the total plan size. As a percentage of GNP, expenditure on education during the years 2000-2004 is estimated at about 2.2%, which compares favorably with an average allocation of less than 1% during 1973-80.

The current trend in public expenditure is consistent with the government's commitments for giving highest priority to the education sector. Allocations for education sector over the last 10 years (1997-2004), was around 18% and 12% of the revenue and development budgets respectively. Within the education sector, primary & mass and secondary & higher education have been given priority over post-higher secondary university education.

The budget for the fiscal year 2002-03, allocated 37% of total revenue budget for primary and mass education while 51% was allocated for secondary and higher education. Development budget however gave higher allocations to primary and mass education (59%) while 34% was allocated to Secondary and higher education. Universities normally receive about 8% of total public sector allocations.

The development partners who extend support to the primary education sub-sector are: ADB, AUSAID, CIDA, DFID, EC, GERMANY, IDA, JICA, NETHERLANDS, NORAD. SIDA, UNESCO, UNICEF. Among the development partners extending support to the secondary and tertiary education sub-sectors, the important ones are: ADB, AusAID, Belgium, CIDA. DFID, EC, IDA, IDB, Netherlands, NORAD, UNESCO, UNDP. Some of the local and foreign funded NGOs also finance education development but mostly for primary and adult literacy programs.

**Table-3**

**Percentage Share of Education in  
Total (Revenue and Development) Budget Allocation**

<b>Year</b>	<b>All Sectors</b>	<b>Education</b>	<b>% of All Sectors</b>
1991-92	150500.0	19088.5	12.68
1992-93	166310.0	22674.3	13.63
1993-94	187500.0	27608.4	14.72
1994-95	214500.0	35262.6	16.44
1995-96	222609.2	35226.2	15.82
1996-97	242349.1	38473.2	15.87
1997-98	267000.0	41787.8	15.65
1998-1999	307650.0	47190.0	15.33
1999-2000	349440.0	52386.1	14.99
2000-2001	371330.0	58517.0	15.70
2001-2002	372891.8	58775.5	15.76
2002-2003	419710.0	65037.8	15.50
2003-2004	486146.1	67398.2	13.86

Source : BANBEIS, MoE, 2003

**PART C: Curricular Documentation**

***(a) Curricular Policies***

The National Curriculum and Textbook Board (NCTB) is responsible for the development, documentation and dissemination of all school curricula: primary, junior secondary, senior secondary, and higher secondary. The process of developing curricula is described below:

***Primary Education: the goals and objectives***

In the prevailing education system of Bangladesh, Primary Education is the first step of education and the primary school-going children receive this education as a fundamental right. There is no doubt that for the socio-economic uplift of any country, it is essential to open the door of primary education for all children and at the same time to ensure that they all receive quality education. We also must bear in mind that the main objectives are to prepare the children to face the realities of life by acquiring knowledge and skills as well as developing the desired healthy attitude towards life in a vaster canvas.

The Goals of Primary Education in Bangladesh are, therefore, to help in the physical, mental, social, spiritual, moral, human and aesthetic development of the children of Bangladesh and to inspire them to have a vision for a prosperous life. The qualities, competencies and skills required for learners for a healthy and prosperous family life and for contributing to the social and national development of the country are reflected in a set of 22 objectives described in Appendix -A.

***Competency based curriculum development***

The program for developing competency-based curriculum in Bangladesh commenced in the year 1986. Countrywide and phased introduction of this competency-based curriculum started in 1992 in class I, and its introduction in class V was completed in 1996. Following evaluation, the previous primary curriculum document was revised in the year 2001. The whole exercise has been predicated on the concept of life long education and hence the primary curriculum has included aspects such as Learning to know, Learning to do, Learning to live together and Learning to be. Now it is being implemented phase-by-phase and expected to be completed in 2005.

***Terminal competences for the primary level***

In the light of the aims and objectives of primary education, the competency based curriculum was determined through discussion, analysis, interpretation and review. Fifty terminal competencies have been finally selected. (Appendix-B)

***Lower Secondary and Secondary Curriculum***

Lower Secondary and Secondary curriculum were reviewed in 1995-1996 following the same procedures. The Overall Aims and General Objectives of Secondary Curriculum is to achieve the learners' overall growth and development. In order to reach this goal, aims and objectives have been determined which are to be achieved through imparting secondary level education. (Appendix-C)

Curriculum and syllabuses for the two stages of secondary education, junior secondary (grade 6-8) and secondary (grade 9-10) have been developed in the light of the 'Overall aim and general objectives of education.' Guidelines for development of curriculum for different subjects in each grade come from the identification of grade wise specific objectives of each subject. The general objective determined for a stage is the source of grade wise specific objectives. Then the attainable learning outcomes are specific for each particular subject and the contents are selected. Finally, how the assessment will be done for particular subject is mentioned in the same document.

The curriculum presently in use in Bangladesh at the secondary level (in grade 9 & 10) was first introduced in the year 1995 and 1996. Since then many changes have taken place in the country and abroad. So the experts, professionals, educationists and the National Curriculum Coordination Committee (NCCC) recently have given emphasis to the revision of the existing curriculum. They focused on the importance of introducing a unitrack curriculum in place of the existing multitrack one consisting of three groups: Science, Humanities and Business Studies.

Unitrack curriculum is widely prevalent in most countries of the world. The main objectives of the unitrack curriculum are to provide a broad based but uniform general education to all learners. The learners will be able to know the history, culture, literature and values of their nation up to age 16 and they will be able to comprehend how different elements of the environment, science and technology influence their daily life. Moreover the learners will be able to select their choice of discipline in education for study in the higher secondary stages.

#### ***Process for the determination of the unitrack curriculum***

The following factors were considered in revising the secondary curriculum:

- Reflection on the State philosophy in the Curriculum
- Reflection of the spirit of the liberation war in the curriculum
- Review of national education policy and education goals
- Need assessment based on reviews and evaluation of
  - the changes that have taken place in the society, economics, culture, politics and science and technology since 1995.
  - the opinions and views of professionals from different strata of the society, expressed in various mass media.

- the effectiveness of existing curriculum, teaching, learning materials, teaching, learning strategies and assessment methods conducted by NCTB staff in 2002.
- the specific demands of the age and the new century.
- the special educational programs undertaken and targets set by the government/global programs (e.g. "Education for all")

Four pillars of Education (as enunciated in the Report of the 1993 UNESCO International Commission on Education for the 21st Century):

- Learning to know
  - Learning to do
  - Learning to live together
  - Learning to be
- Study of secondary education curriculum of some regional and other countries
  - Writing of aims and objectives of secondary education by the specialists and different professionals and finalizing them at a national workshop
  - Formation of 12 subject committees who have prepared draft subject curriculum within a framework. Learning outcomes, contents, teaching-learning strategies and resources are determined in a matrix that would be possible to be used as teachers resources. (Appendix-D)
  - Stakeholders' opinions in some divisions are now being collected before finalizing this document.
  - Subsequent to the development of the new curriculum and documents, textbooks will be produced emphasizing a student centered approach to learning.

### ***Higher Secondary Curriculum***

The existing higher secondary curriculum was introduced in the year 1995 and it is also subject based. It is expected that after introducing the unitrack curriculum in secondary level the higher secondary curriculum will be reviewed and reformed.

### ***(b) Objectives and key features of current and forthcoming reforms***

The Education system of Bangladesh is continually undergoing reforms in order to meet the current and future needs and challenges of the socio-economic developments of the country as well as the imperatives of a global knowledge economy. The National Education Commission 2003 has submitted its report to the Government, which now being reviewed to prepare an implementation strategy and plan. As a matter of fact some of the ongoing and proposed reforms are so generic and that they are already being implemented and/or have been planned for implementation.

Some of the major observations, principles and recommendations of the Report of the National Education Commission 2003 are presented in Appendix-E:

(Enclosed:

Appendix-A: revised goals and objectives of primary education,

Appendix-B: final list of terminal competencies for the primary level

Appendix-C: overall aim and general objectives of education

Appendix-D: one unit draft science curriculum-under unitrack curriculum).

Appendix-E: Major observations, principles and recommendations of the Report of  
National Education Commission 2003)

## **PART D: Achievements, Problems and Challenges**

### ***(a) Major Achievements: Quantitative and Qualitative***

Access to knowledge is key to skills formation and paramount to improving productivity. Education has proved to be the most important instrument for poverty reduction. Bangladesh has made significant progress in providing more young people with access to education. An important feature of the education system in Bangladesh is the pluralistic nature of the delivery systems, despite centralized nature of policies and financing. The wide varieties of providers that supplement public sector institution include local and foreign-funded NGO's (particularly at the primary level with nearly 2 million pupils at NGO managed and financed satellite schools), private charities and local elite/leaders/politicians. Nonetheless, in spite of all remarkable achievements, declining *quality* in education remains a major concern.

**Quality** itself is a somewhat ambiguous term since it has connotations of both standards and excellence. "*Quality of Education*" is a broad concept which is defined as learning achievements, assessment of competency at satisfactory standards. *Quality education* is a product of many factors, among them: the competence of teachers, the relevance of curricula and syllabi, the efficiency of management and the adequacy of physical facilities are important. A competency is defined as the demonstrated ability to perform specified acts at a particular level of skill or accuracy. Quality of Educational institution refers to quality of input, process, output and impact of school.

There are two main reasons for the lack of quality and the resulting problem of low internal and external efficiency. The *first* is the difficulty in recruiting placing and retaining sufficient numbers of properly trained personnel to manage the system. The *second* is the low investment in those essential inputs that are absolutely required for qualitative improvements, such as textbooks and other learning materials, improved curricula and, most importantly, teacher-education. However, Bangladesh government fully recognizes the urgent need to improve the quality of education alongside its efforts for creating equitable access to primary, secondary, higher secondary, tertiary, technical and vocational education.

#### ***Primary Education: Access, equity and quality***

Education plays a vital role for substantial economic development and primary education lays the foundation for it. Perhaps the greatest strength of the primary education in Bangladesh is the consistent, high level national commitment and consensus on the priority. Bangladesh has not only achieved the goals set on the basis of *Jomtein Declaration* but in many cases has exceeded the targets. In the last decade of the last century the main thrust was more or less quantitative expansion of primary education. From the last decade the emphasis has been shifted to both quality and quantity. The present thrust is mainly on quality. This commitment is

reflected in high investments and financial allocations for primary education over the 1990s. As a result Bangladesh runs one of the biggest primary education system in the world. Development of primary education poses a daunting challenge because of inaccessibility and resource constraint. Despite these Bangladesh has achieved remarkable progress in terms of access and equity in primary education. Total number of pupils at the primary level is estimated at about 18 million. The Gross Enrolment Rate (GER) and the Net Enrolment Rate (NER) at the primary are 97.35% and 86.68% respectively, compared to 64% in 1990. Nevertheless, the dropout rate is still very high (33%), although significantly lower than 59% in 1990. The girl-boy ratio at this level is 49:51 Female teachers constitute 38% of the total teaching force. (BANBEIS, MoE, 2003).

Between 1992 and 1997 the number of primary schools increased by more than half from 50,300 to 77,600. Efforts to get girls into school have been highly successful and is now almost at par with boys' enrollment. These efforts include community mobilization schemes, emphasis on hiring female teachers and locating schools near the children's homes. Bangladesh also does much better than other countries in South Asia in enrolling students from poor families in primary education.

In the fifth Five Year Plan (1997-2002), the Government accorded priority to primary education. So the Government took up a massive programme for rapid expansion of primary education. The objectives of the plan (1997-2002) were:

- increase gross enrolment rate around 110 percent (net 95%) with particular emphasis on girl enrolment.
- increase primary education completion rate to at least 75 %.
- improve the quality of teacher training, supervision, management and monitoring system
- revise and update curricula with a view to making them relevant to the needs,
- set up an effective Resource Centre as information base at the Thana (upazila) level,
- undertake innovative programmes and conduct research and evaluation,
- strengthen capability of National Academy for Primary Education (NAPE), Directorate of Primary Education and Primary and Mass Education Division (PMED),
- reduce gender gap and regional imbalances and
- inculcate social consciousness among the children about their duties and responsibilities as good citizens.

To achieve these goals following strategies were taken to ensure quality of primary education:

- Decentralization of the management of primary education
- Initiation of child-centred teaching methods, and
- Initiation of appropriate education system for the disabled and the retarded.

Improved management of primary education is illustrated in several measures adopted by the Primary Mass Education Division (PMED) since 1997. PMED prepared a comprehensive Primary Education Development Programme (PEDP) involving a total investment cost of US\$ 1600 million over a period of 5 years (1997-2002), excluding revenue expenditure. The broad objectives of PEDP were:

- the quality improvement in primary education
- enhancement of the educational planning and management capacity and
- increasing equitable access to primary schooling

Because of the adoption of many pragmatic steps most of the objectives of the Five Year Plan have been achieved. These achievements are:

- Construction, reconstruction, repair, renovation work of many schools was completed.
- A total of 4,420 satellite schools were established. Teachers of those schools were imparted training. Teaching aids, stationery materials and school furniture were also supplied to these schools.
- Upazila Resource Center (URC) has been added to the present structure of primary education with the objective of supporting the teachers of primary schools with need based initiatives.
- A total of 267.30 million new textbooks were distributed free of cost.
- NGOs were provided grant to establish schools in the unserved villages.
- To expedite the training of the teachers of non registered non government primary schools, two shifts of training (C-in-Ed) in Primary Training Institute have been initiated. A total of 30,000 teachers have got training.
- Supervision and monitoring system have been strengthened. New and more targeted inspection formats have been developed for inspection of schools.

PMED and DPE officials are required to make periodic field visits to spot check on office management in Thana and district offices as well as look into teacher and student attendance in schools. The PMED has also mandated that every school send at least 20% of their students for the grade V National Scholarship Examination. The intention is to use this as a proxy for national assessment of achievement. The PMED has also initiated routine self-evaluation by school authorities in the form of performance monitoring reports to be filled by Head teachers and the Chairperson of the School Managing committee (SMC). In addition,

a wide range of homegrown non-government institutions provide substantial support for primary education. Textbooks and teachers represent other strengths of the system. The textbooks are well designed based on a revised curriculum that is supported by 53 competencies. The curriculum has begun to stress higher-order skills such as thinking and problem solving. The government has recently introduced a scheme of continuous training of teachers under this scheme, all the teachers of a sub cluster attend a daylong training session once every two months with their respective Assistant Thana Education Officers(ATEO). The system enjoys a well developed policy framework and investment plan for 1997-2003, financed by ADB, IDA, Germany, UNICEF, Norway and DFID. There is widespread agreement about the priority interventions of institutional capacity building at the Thana and district level, curriculum revision, teacher training, provision of free stationary to the poorest students and social mobilization which aim at improving the basic quality of primary education.

***Secondary Education: Access, equity and quality***

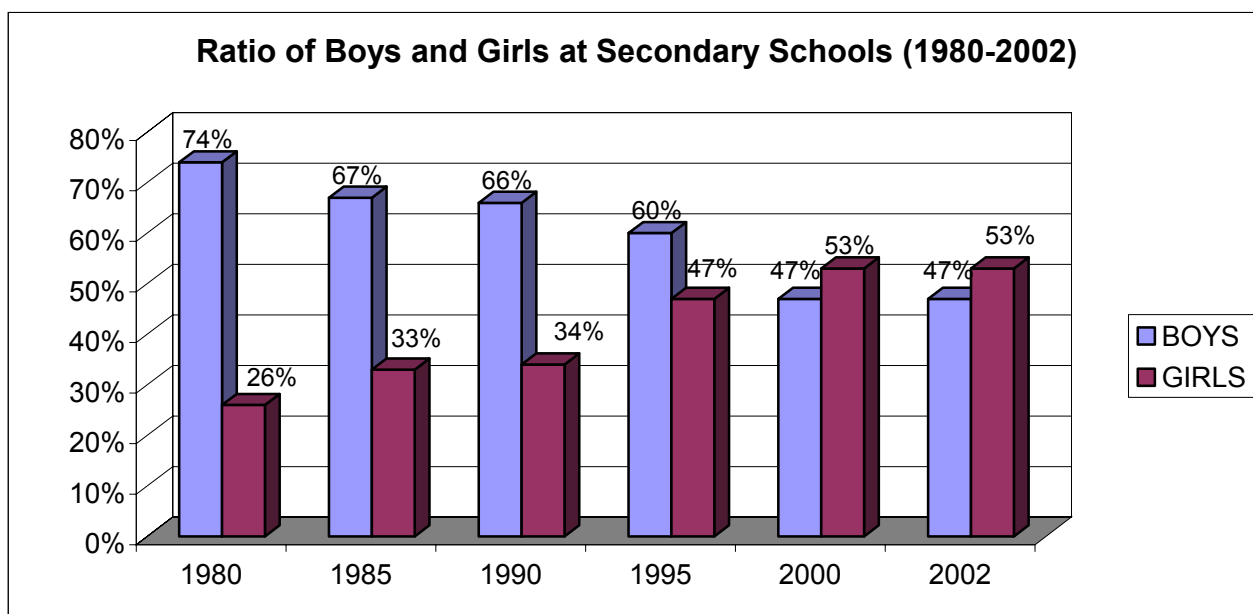
The proposed National Policy on Education recommended that the secondary education system be restructured by transferring the first three years, lower secondary (grades VI-VIII) to primary education. The objectives of the new, expanded system of basic education would be maintenance of literacy, basic life skills, an introduction to science and technology in preparation for low-level employment, self-sufficiency and continued education. Grade 9-12 would constitute a new integrated cycle and would provide both a vocational and higher education focus in all schools. The reconstituted secondary schools would provide broad-based education to promote general skills, intermediate life skills and science and technology in preparation for mid-level employment

In terms of **access** to secondary (grade 6 - 10) education, Bangladesh has still a long way to go. The GER at this level is 46.23%. Regarding gender equity, it has been more than achieved with a girl-boy ratio 53:47. (BANBEIS, MoE, 2002)

There are over 8 million students at the secondary level. About 80% of the primary graduates enroll in secondary level but only about 18% of them complete secondary level. The gross enrolment rates at junior secondary level (grade 6-8) and senior secondary level (grade 9-10) are 81% and 47% respectively. The gross secondary enrolment rate (grades VI-X) has been estimated at 65% and net enrolment rate at 43% (16% in 1990) in 2003 against 28% and 16% in 1990 respectively indicate a remarkable enhancement in secondary enrolment over a period of 13 years.

### ***Gender Parity in Enrollment***

In order to increase female enrolment, stipend programs have been introduced for female students at the primary, secondary and higher secondary levels. Government is also providing tuition fees, SSC examination fees, book allowance etc. for the female student that created a positive impact in increasing their enrolment and retention.



Source BANBEIS, MoE, 2003

### ***Private School Management***

As per existing regulations, private secondary schools are managed by School Management Committees, comprising of members nominated by the government and those elected by teachers of the relevant schools and parents. This type of management structure was designed to provide participation of local stakeholders. It also provides the SMCs with the flexibility to hire teachers without going through a central bureaucratic system. However, in many instances the SMCs have not performed as had been expected.

### ***Private Resource Mobilization***

Bangladesh has a tradition of private contributions to education. Before independence in 1971, more primary schools were non-government than in secondary education. After independence the government nationalized all primary schools, started to pay all salaries for teachers, although many secondary schools continue to be supported by community initiatives.

### ***Key Inputs: Textbooks***

The NCTB revised textbooks for grades VI to X. Textbooks are available for purchase in the open market at reasonable costs.

### ***Potential supply of well-qualified teachers***

The minimum entry for teaching in secondary school is a bachelor degree (usually BA and B.Ed). More than half of the secondary teachers hold Master's degrees. Continuous education is also a tradition among Bangladeshi teachers.

#### ***Output Measures***

The SSC and HSC examination in Bangladesh are nationwide, standardized and accepted by tradition. The examinations are administered for the most part effectively, including well-designed computation of results. However, except for recent improvements, pass rates have been low, indicating high system wastages.

#### ***Technical Vocational Education and Training: Access, equity and quality***

Technical Vocational Education and Training (TVET) is provided by formal and informal means. Formal TVET is provided within the school system at the certificate level (Grade 8+2), diploma level (SSC+3 years), and degree level (HSC+3-4years). The Ministry of Education (MoE) establishes curricula, standards, and examinations for vocational and technical education through the Technical Education Board (TEB). The Directorate of Technical Education is responsible for planning, development coordination and supervision of TVET under the MoE. The Ministry of Labor and Manpower (MOLM) provides skill training through its technical centers. Altogether, the output of the formal system for skills has increased from about 5,000 to 10,000 per annum. The main developments that have occurred in certificate-level vocational training are the introduction of: (1) the SSC(vocational) stream in the TTCs, and VTIs and as an option in secondary schools; (2) short courses on basic trades in the Technical Training Colleges(TTCs) /Vocational Training institute (VTIs); and (3) tailor-made short courses on a cost-recovery basis in the afternoon and evenings.

#### ***Strengths***

- Entrance is reasonably competitive at all levels of formal skill training. Well-developed exit standards exits, i.e., skill testing and certification is well developed and managed.
- The Technical Education Board (TEB) is small, self-supporting and a relatively effective organization for developing curricula and trade tests.
- Good models exist for skill training by non-government institutions (including UCEP and MAWTS).
- TTCs and VTIs have become more flexible in their non-regular programs by offering short term training programs on a cost-recovery basis in the afternoon and evenings to those who have completed their formal schooling.
- Several comparatively good quality public training institutions exist.

#### ***Higher Education: Access, equity and quality***

Higher education in Bangladesh has many strengths and advantages. At the university level, reasonably good quality teaching exists in most of public and some

of the private universities. In 1998 Dhaka University was ranked forty-fourth of 65 leading Asian universities. It ranked ninth in student selectivity, an indicator derived from number of first-year students accepted compared with total applicants and their performance on national examinations. 70% of the members of Dhaka University's faculty hold PhD degrees from reputable universities abroad. A rigorous admission and terminal examination system exist.

Private establishment and management is an important characteristic of higher education in Bangladesh. These include 80% of degree colleges and the emerging private universities. Students tend to pay the costs through tuition and other fees. These institutions are an important factor in limiting the public costs of higher education. The quality of some private universities is reasonably high. Already there is an evidence that private universities is an effective means of bringing innovation in both content and method of teaching in higher education. They are well attuned to labor market requirements. Bangladesh Open University (BOU) has the potential to provide a broad number of students with relevant higher education programs at low cost per student. At the degree college level, National University (NU) is well placed to leverage quality improvements.

## **(b) The main problems and challenges:**

### ***Primary education***

To realize the vision of a strong and vibrant system of primary education, Bangladesh must be prepared to meet the following challenges:

- The dropout rate is still very high (33%).
- Presently, 10 percent of children do not enter primary school at all. Among these are also children with disabilities and ethnic minorities. These children are from hard-to-reach poor families as well for whom the cost of attendance is too high.
- Forty percent of those who enter primary education do not complete the five year cycle.
- Student wastage (repetition and dropout) is high, with most students taking six years to reach fourth grade.
- Those who complete the five grades perform on average at about a third grade achievement level and lack essential problem solving skills.

Solutions to these problems require priority attention to improvements in *quality*. Better quality will reduce wastage in the system and increase completion rates.

### ***Secondary education***

Progress at the secondary level over the next two decades will build on the assessed strengths and achievements of the secondary education system. Bangladesh must eliminate fundamental distortions in the secondary school system and face the following challenges:

***Relevance of Content***

Secondary education mainly serves as a screening device for entry into higher education. Only a fraction of the students who enter secondary education survive to grade XII and pass the HSC examination, a requirement for entry into higher education. The issue is that the curricula and teaching programs are all geared by long tradition to preparation for higher education that only a fraction of students are able to achieve. The vast majority who drop out are not receiving relevant preparation in skills they will need for life.

***Reducing Inequities***

Bangladesh fails to provide equal access to quality secondary education and outcomes. Access is uneven geographically because schools have been established where parents can afford them, not where the most needy children live. Among existing schools major disparities exist in provision of inputs, such as allocation of trained teachers, class sizes and facilities. Poorer student cannot afford the costs necessary for success in secondary education. Private tutoring is common throughout secondary education to prepare for the final examinations. Private tuition undermines the equity goals of public expenditure on secondary education.

***Raising Incentives for Quality***

Poor quality is the product of multiple factors such as large class sizes, untrained teachers, lack of self-teaching materials, curricula with too many objectives and textbooks with unrealistically high standards. Perhaps the most basic causes of poor quality are lack of accountability and perverse incentives in the system. Government subventions are not linked to performance.

***Quality assurance***

Academic supervision is a process by which teachers are provided with professional assistance in teaching content and techniques. Academic supervision has been one of the weakest areas of secondary education. The present inspection system, established long ago, has not been able to add to the quality of education or to be a source of guidance to the teachers. The present inspection system does not serve to identify weaknesses in quality or to work out remedial plans.

## ***Technical and Vocational Education***

By 2020, Bangladesh will have a much greater diversity of provision and targets of skill training. The impact of TVET on poverty alleviation will have been increased through greatly expanded public financing of TVET, major reforms will also have been achieved in the delivery of TVET. The current system of TVET has several advantages it can build on to attain this vision. However, the existing problems in TVET are as follows:

### ***Lack of linkage to the job market***

The main problem with formal and nonformal TVET is the lack of linkage to employers and the job market. Employers complain that training programs do not produce the skills they require. No incentives are given to instructors to consult with employers. More over, the rigid, centralized training system limits the possibilities of capitalizing on local responsibilities and initiatives.

### ***Lack of impact on poverty reduction***

The second issue is lack of diversification in training clientele. TVET is almost exclusively geared to in-school male youth in grades 9-10 as part of SSC vocational. Underprivileged youth outside the school system, especially girls, do not have access through the TVET system for the skills they need to help them raise incomes in the informal sector.

### ***Ineffectiveness of training support and delivery***

Low quality is reflected in relatively low pass rates for many vocational and technical training institutions. About one third fail to pass the final examination. The instructors of training institutions lack incentives for good quality teaching. Most instructors have not had industrial experience in the skills they are paid to teach. In theory, 60% of the time is devoted to the acquisition of practical skills, but in practice it is much less. Most VTIs, polytechnics, and specialized degree programs suffer from outdated, obsolete, and worn out equipment. Lesson plan and job sheets are rarely used in training.

### ***Under financing***

The operating costs of vocational training are high, probably in the order of \$300/student per year (24 times the cost of a student in primary education). The government shoulders practically all the costs, including providing trainees with stipends and subsidizing their accommodations. At the same time, equipment and consumable supplies are chronically under financed in most public institutions. Substantial resources are wasted in technical and vocational training at present, even though the system is under funded.

### ***Teaching learning***

The fundamental issue at the secondary level is the shortage of trained teachers; fewer than half of the secondary teachers have had any teacher training and recruitment of teachers does not always attract the best candidates. Teacher

motivation is affected as there are no real incentives for rewarding teaching effort and excellence. Furthermore, the curriculum and textbooks have been criticized for being and over loaded. The prevailing learning culture and examination system emphasizes memorization rather than creative thinking, problem solving and practical work skills. The environment in which teachers work is not conducive to success as the education system lacks a reliable capability to monitor and evaluate performance at all levels, administrative, teaching and student learning. Many schools are in deplorable physical condition with inadequate furniture and equipment unused because of lack of materials and maintenance.

### ***Higher Education***

The main challenges and problems in higher education are as follows:

#### ***Overcoming problems of external efficiency of the system***

Distortions exist in the allocation of students by field of study, structural rigidities that impede the flow of funds to open, close, expand, and contract courses in response to market demand, and inadequate research output (research consumes only 0.5 to 1.5 percent of university budgets). Inadequate support for poor students is also an issue.

#### ***Restructuring sub sector management***

Within universities, governing bodies tend to be dominated by teachers and lack outside representation from guardians and employers. Vice Chancellors have few resources to supervise staff, allocate resources, and hold departments accountable for funds spent. Department chairpersons, who are rotated routinely, have little if any authority over teaching staff. The University Grant Commission (UGC) is also weak in enforcing standards and holding institutions accountable for funds received.

#### ***Quality Issues***

Enclaves of excellence exist in many universities and colleges. Still, many problems impede strong learning achievement in universities. One of the reasons for indifferent quality is the system for appointment of teaching staff. Many claim this process leads to mediocrity. Most institutions lack information technology and international linkages. In some universities students rely on photocopies notes of students from previous years. The problems of quality in university education are not so glaring when compared with the degree colleges. The proliferation of degree colleges, with inadequate supervision by the NU has eroded quality, led to a third rate system of higher education, and become a major problem.

#### ***Managing costs and improving efficiency***

There are some signs of inefficient allocation of resources within the system. Budgets are transferred to universities in three categories: salaries and allowance, educational contingencies and other contingencies. Managers have little flexibility in spending their budgets. Funds may not be transferred across categories. Any savings at the end of the year are returned to the exchequer. This process destroys any incentive to save and in fact works the opposite way.

### ***Equity***

Admission to higher education is highly inequitable. Those who survive in the education system are those who can afford the opportunity costs of attendance. The poorer segments of society have dropped out much earlier in the education system. Children from rich group are almost exclusively represented in higher education institution. Female students made up only one-fourth of enrollments. Almost 10 percent of the budget for higher education is allocated to student stipends and subventions. However, the stipends are allocated on merit, not on the basis of economic need.

### ***Student Unrest and Violence***

The biggest obstacle to efficient teaching and learning is widespread politicization of university education leading to strikes, student violence, and frequent, extended closure of institutions. Student politics exert a tight constraint on the possibility of rationalizing higher education, in particular to achieve greater cost recovery.

### **(c) Conclusion**

There is no alternative to education for development of human resources. This fact is now universally recognized. More investment in education means moving ahead in development. If we consider the broad perspectives of the development of the socio-economic conditions of Bangladesh, there are a number of inadequacies, hindrances and a dearth of financial resources. Our experience, commitment and determination, with the assistance of development partners will, however, carry us through.

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## Appendix-A

### THE REVISED GOALS AND OBJECTIVES OF PRIMARY EDUCATION:

#### **1. Goals of Primary Education:**

To help in the physical, mental, social, spiritual, moral, human and aesthetic development of the children of Bangladesh and inspire them to have a vision for a prosperous life.

#### **2. Objective of Primary Education:**

In order to help fulfill the above goals the following 22 objectives will have to be achieved:

- [1] To instill in the learner an absolute trust and faith in Almighty Allah so that it works as a constant source of inspiration for all his/her thoughts and actions and helps develop spiritual, moral, social and human values.
- [2] To help the child develop moral qualities and qualities related to character through the cultivation of respective religious instructions.
- [3] To arouse in the mind of the learner a sense of love, respect, equality, fellow-feeling and cooperation of all, irrespective of nationality-religion-caste, male-female, and make him/her desirous of peaceful environment.
- [4] To arouse in the mind of the child an eagerness for human rights, mutual understanding, cooperation, universal brotherhood, internationalism, and world peace and culture.
- [5] To make learner interested in manual labour, develop in him/her a sense of respect for manual labourers, and help develop an awareness of enhancing quality of life through economically gainful labour.
- [6] To develop awareness in the learner about his/her own as well as others' rights, duties and responsibilities, through active participation in various activities undertaken in the family, society and the school.
- [7] To help the learner practice tolerance to others' opinion and cultivate democratic norms and rules.
- [8] To arouse in the children a sense of patriotism and nationalism, a spirit of sacrifice and motivate them to take part in the nation-building activities, through inspiring them in the spirit of liberation war.
- [9] To help gain knowledge about and insight into national history, heritage and culture and arouse in them a sense of respect for these.
- [10] To help physical development of the learners through physical exercises and games and sports and help develop the habit of healthful living.
- [11] To help acquire all the basic skills of Bangla language as a medium of instruction for effective use in all spheres of life.

- [12] To help the learner acquire mathematical concepts, and skills and the competences of rational thinking and problem solving.
- [13] To help the learners acquire basic skills of English as a foreign language and help in the use of this language.
- [14] To make the learners interested in lifelong education through arousing in them adequate curiosity towards learning skill and knowledge.
- [15] To acquire knowledge of science and technology, develop habit of solving problems through scientific method, and help develop scientific attitude for improving the - standard of living.
- [16] To help acquire ideas about sources of information, collection of information through various media including computer, their use, processing and preservation.
- [17] To help the children know and understand about environment, and motivate them in its development and preservation by making them take active part in the prevention of pollution of environment.
- [18] To help the child unfold his/her creativity, sense of beauty through the study of Music, Arts and Crafts, etc.
- [19] To help develop the attitude of making appropriate use of community and national resources and to be careful of their conservation.
- [20] To help develop in the child the desired moral and social qualities like: sense of justice, sense of duty, sense of discipline, good manners, orientation towards living together etc.
- [21] To form ideas about the effect of population growth on the basic needs of people and environment, and to help develop awareness about this.
- [22] To help the learners acquire necessary knowledge and skill as per the ability, aptitude and interest of the learner, so that he/she can grow up as a complete individual and a capable citizen and to develop him as eligible for the next stage of education.

## **Appendix-B**

### Final List of Terminal Competencies for the Primary Level

- [1] To have absolute trust and faith in Almighty Allah.
- [2] To know about the Creator and remember the Creator in all activities and express gratitude to Him.
- [3] To know about the biography of Hazrat Muhammad (SAS), the Prophet of Allah/founders of respective religions and follow their teaching and ideals.
- [4] To know about the Holy Scripture of one's own religion and acquire qualities of moral and personal character through following the instructions of respective religions.
- [5] To love all the creations of the Creator.
- [6] To show respect and tolerance to all irrespective of their nationality, religion, caste and sex.
- [7] To know about the people of other countries and to create a sense of love and tenderness for them.
- [8] To gain idea about the basic needs of human beings, and to be aware of developing a nice livelihood.
- [9] To be aware of one's own rights and also the rights of others.
- [10] To allow others to express their opinions and to show respect for such opinion.
- [11] To extend cooperative and friendly behavior with all.
- [12] To be interested in manual work and to be respectful to people living on manual work.
- [13] To be aware of one's own duties and responsibilities as a member of the family and to take part in household chores.
- [14] To be aware of one's own rights, duties and responsibilities as well as those of others through active participation in social and school-based activities.
- [15] To be aware of democratic norms and as a good citizen to be careful about one's own responsibilities and duties.
- [16] To take part in nation building activities imbued with a spirit of self-sacrifice.
- [17] To gain adequate knowledge about the geographical position and features of Bangladesh.
- [18] To be imbued with a sense of patriotism and nationalism in the spirit of liberation war.
- [19] To know and be respectful about the national history, heritage, culture and literature.
- [20] To be active in the development and preservation of the environment.
- [21] To develop liberal attitude towards universal brotherhood and the culture of various countries and to develop an appreciation of the spirit of world peace.
- [22] To develop an attitude to be careful in making appropriate use of personal, family, community and national resources and their conservation.

- [23] To be informed about the gradually increasing population of the country and to gain awareness of its effect on environment.
- [24] To gain knowledge about the mode of construction of Bangla language, arrangement of sentences (syntax) and rules and orders and to be able to apply them.
- [25] To be able to understand the central ideas of rhymes,poems,stories, speeches, narrations and conversations in Bangla, listening to them attentively.
- [26] To be able to speak to class fellows and others understandably in colloquial Bangla with correct and standard pronunciation.
- [27] To be able to read printed and handwritten texts correctly and understand the sense of the texts read.
- (28) To be able to express in writing, the observations, experiences and ideas in Bangla correctly and clearly, write common letters and applications and fill in various forms
- [29] To gain ideas about and be able to use numbers.
- [30] To be able to listen, speak, read and write numerical and ordinal words (including date).
- [31] To know the four fundamental rules (operations) of mathematics and to be able to use them.
- [32] To recognise the geometrical shapes and sizes of various things in the environment and to be able to use them.
- [33] To know the units of length, weight, area, volume, time and coins and to be able to use them.
- [34] To be able to apply mathematical skills in solving practical and information-based simple problems.
- [35] To be able to use various information from the environment through collection, organisation and processing of them.
- [36] To know about calculator and computer and to be able to use calculator in computations.
- [37] To be able to apply mathematical knowledge in solving population-related problems.
- [38] To listen to and understand simple conversations, stories and rhymes in English and to enjoy them.
- [39] To be able to speak in simple and correct sentences in English about one's own observations, ideas and feelings.
- [40] To be able to read and understand printed and handwritten materials in English.
- [41] To be able to write brief accounts of experiences and know things in correct and simple English.

- [42] To acquire knowledge about the application of science and technology in enhancing the quality of day to day life.
- [43] To develop habit of solving problems by adopting scientific methods.
- [44] To develop scientific attitude.
- [45] To know the environment through observation and enquiry and to be able to classify different things and events on the basis of the knowledge acquired.
- [46] To be aware of the variety in creations through the study of Arts and Crafts (such as drawing designs and sketches; work of clay, wood, cloth, and paper) and to develop one's own creativity and extend areas for enjoying beauty.
- [47] To promote one's own creativity, sense of beauty, aesthetics and intelligence through the study of Music, Dance and Drama.
- [48] To be interested in games and physical exercise.
- [49] To know and follow health rules with a view to ensuring healthful living.
- [50] To acquire the mentality of living together and to be imbued with the attitude of honesty, sense of justice, duty, discipline and good manner and behave accordingly.

## Appendix-C

Overall aim and general objectives of education

To accomplish learners overall growth and development is the ultimate aim of education.

In order to reach this goal the following objectives are to be achieved through Secondary education:

- To develop in the mind of the learner a firm faith and belief in the Almighty Ailah so that this belief works as a source of inspiration in all his/her thoughts and - actions.
- To arouse in the heart of the learner spiritual, social and moral values based on absolute faith and belief in the Almighty Allah.
- To develop in the learner human qualities and make him /her an ideal man who would be honest, good-character (virtuous), patriotic, responsible and dutiful, through the development of religious, spiritual, cultural and social values in his/her mind.
- To accomplish physical, mental, moral and social growth through the creative development of the inherent capacity and qualities of the individual.
- To provide learner with the opportunity of developing on his/her own talent and aptitude and to foster his/her creativeness.
- To develop necessary skilled, creative and productive manpower for the socio-economic development of the country by making education application oriented/pragmatic.
- To create a sense of respect for manual labour in the learner by making education life-based and work oriented.
- To help learner acquire necessary competencies and skills, as per his/her talent and aptitude, in order to earn livelihood
- To inspire learner in free expression of original thinking and development of free thinking and life-oriented, realistic and positive attitude in the society.

**Appendix-D**

**UNIT 1 LET'S GET MOVING (One Unite of Draft Science Curriculum - under unitrack curriculum)**

Specific learning outcomes			Content	Recommended Teaching learning activities and resources
Cognitive	Personal	Social		
<p><b>Intellectual and problem solving skills</b></p> <p>At the completion of this Unit, a student should be able to:</p> <ul style="list-style-type: none"> <li>describe the relationships between displacement, velocity and acceleration and with time.</li> <li>calculate speed, average speed, acceleration and, deceleration (both theoretically and practically)</li> </ul>	<p><b>Personal skills</b></p> <p>During this Unit a student should consistently:</p> <ul style="list-style-type: none"> <li>a student should consistently:</li> <li>show honesty and discipline, patience and fairness with others in conducting group discussions and experiments</li> </ul> <p><b>Communication skills</b></p> <p>At the completion of this Unit, a student should be able to:</p> <ul style="list-style-type: none"> <li>write a brief report on how force and motion influence our daily lives</li> <li>explain orally how force and motion influence our daily lives</li> </ul>	<p><b>Social skills</b></p> <p>During this Unit a student should:</p> <ul style="list-style-type: none"> <li>confidently express his/her views on how motion and force influence our lives</li> </ul> <p><b>Go-operative skills</b></p> <p>During this Unit, a student should: actively participate with other students in conducting discussions and investigations</p>	<p><b>1 Motion and motion-related quantities (3 periods):</b></p> <p>Examples of motion from different points of view with diagrams</p> <p>Distinction between distance and displacement</p> <p>Meaning of speed</p> <p>Connection between speed and velocity</p> <p>How to measure speed [speedometer, radar, laser gun]</p> <p>Calculating speed at different times and drawing a graph of the relationship</p> <p>Meaning of acceleration and deceleration</p> <p>Calculation of acceleration and deceleration.</p> <p>----- ----- Investigation to be conducted outside t Measurement of distance, speed and acceleration for a trip -----</p>	<p>Use practical experiences such as the motion of a rickshaw, car walking to demonstrate motion from different points of view.</p> <p>Ask students their understanding about distance and displacement and their measurement</p> <p>Ask students if they know speed</p> <p>Describe how distance is related with speed arid displacement with velocity</p> <p>Discussion of how to measure speed using machines (mentioned in the content)</p> <p>Calculation of speed and average speed and students to calculate. Explain how to draw graphs: students to draw speed-time graphs</p> <p>Discuss acceleration and deceleration and their relationships with velocity and time and their calculations.</p> <p><i>Resources: round shaped small object, plane, inclined plane, uneven plane, bicycle (model) rickshaw (model), graph paper</i></p> <p>Group work to be done outside the class room Students can ride a bicycle or can use rickshaw or they can run in the play ground to measure distance, speed and acceleration. Teacher will select the trip and provide guide.</p> <p><i>Resources: Stop watch/clock, measurement tap(meter gauge) and other material(s) 1 if necessary, teacher/students will select</i></p> <p>----- -----</p>

Specific learning outcomes			Content	Recommended Teaching learning activities and resources
Cognitive	Personal	Social		
<ul style="list-style-type: none"> <li>analyze how different forces act together to affect the motion of objects</li> <li>Solve simple mathematical problems in context of force and acceleration</li> <li>conduct experiments to investigate the relationships between force, mass, and acceleration in different conditions</li> </ul>			<p><b>2 Forces acting on bodies in motion (4 periods)</b>  Meaning of push, pull, tension with diagram and direction  Which one is easier, push or pull? explain  Description of types of forces acting on a body in motion and at rest  Meaning of inertia with examples and concept of mass and force from inertia  Relationships between mass, force and acceleration  Calculations involving <math>F=ma</math>  Concept of 'action-reaction' forces, application in different situations  Experiment with a balloon  How friction affects motion and ways to limit its effects  Function of brake  Influences of forces and motion in daily lives</p> <p style="text-align: center;"><b><u>Scientific investigation (1 period)</u></b></p> <p>Introduction and explanation of process of scientific investigation and experiment</p> <p>----- Investigation (1 period) -----  Class conducted in Science Laboratory  Students investigate some selected relationships between force mass and acceleration at different conditions  -----</p>	<p>Teacher will ask student what they understand about push, pull tension, ask students to show some activities, teacher will explain details.  Ask students which one is easier push or pull and explain it.  Teacher provides examples of motion such as a car stopping suddenly or turning a corner or at rest to consider the forces acting on a vehicle at rest or in motion  Then deriving meaning of inertia and its relationship to mass and force.  Consider applications of inertia in everyday life  Ask students, in groups, to demonstrate/exhibit some inertia activities  Derive relationships between force and acceleration using examples such as motion of a car or rickshaw/bicycle and apply these relationships to calculate force.  Via popular activities such as hitting a cricket ball, catching a ball or starting a sprint explain the meaning of action-reaction forces.  Design an experiment will,, a balloon that is inflated and released to examine the forces involved  Explain the concept of friction with the use of popular examples  Draw a diagram to explain friction and its effect on motion  Discuss ways to limit the effects of friction  Ask students what happen when a moving vehicle suddenly stopped by using brake discuss function of brake with diagram and force direction.  <i>Resources: open mouth bottle/jar, smooth polish hard paper; even, uneven and inclined planes; rickshaw (model), bicycle (model), door table and other materials inside classroom to exhibit action-reaction force and friction</i>  Before conducting first experiment, brief students about the scientific methodology and practices in conducting experiments  Divide students into groups, Teacher will select the task to students and student will design the experiment and will perform to find out the respective assignment  <i>Resources: Inclined planes, toy car, dynamic cart, pulley, different masses (such as 40g, 60g, 80g, 100g, 120g etc.) meter scale/meter gauge etc.</i>  Other materials can also be used according to the situation.  Teacher will provide guide-</p>

UNIT 1 LET'S GET MOVING (continued 2)

Specific learning outcomes			Content	Recommended Teaching learning activities and resources
Cognitive	Personal	Social		
<p><i>Intellectual and problem solving skills</i> At the completion of this Unit, a student should be able to:</p> <ul style="list-style-type: none"> <li>• illustrate the relationship between momentum and collisions</li> <li>• explain how damage in collisions could be minimized</li> <li>• Verify the principle of conservation of momentum</li> </ul>			<p><b>3 Collision and Momentum (2 periods)</b></p> <ul style="list-style-type: none"> <li>• Head-on collision, how mass and speed affect due to head on collision</li> <li>• Meaning of momentum- derivation of formula and its linkage with inertia</li> <li>• Conservation of momentum</li> <li>• Calculation of momentum</li> <li>• Steps to limit effects of collision-safety features</li> </ul> <p>----- Investigation (1 period) Investigation to be conducted in science laboratory Verification of the principle of conservation of momentum ----- -----</p>	<p>Ask students what happens when head-on collision occurs? What physical quantities related to collision Why do some collisions cause more damage than others? Extend and enrich students' understanding through discussion with students participation</p> <p>Review students' previous understanding about momentum Introduce the concept of momentum, formula and link it with inertia,</p> <p>Describe principle of conservation of momentum and calculate momentum</p> <p>Assess students' understanding about collision and momentum via illustrations</p> <p>Explain how effect of collision can be minimized by taking preventive measures in our life for example seat belts etc. Resources: Poster showing effect of and motion</p> <p>Some activities (such as 'the funny marbles', "the crashing phenomena "etc.) to be done by the students in group work to exhibit the conservation of momentum <i>Resources: A plastic ruler(30 cm long with center groove seven identical marbles, a pair of stakes ( straw will also do) brick or other heavy weight</i></p>

UNIT 1 LET'S GET MOVING (continued 3)

Specific learning outcomes			Content	Recommended Teaching learning activities and resources
Cognitive	Personal	Social		
<p><i>Intellectual and problem solving skills</i></p> <p>At the completion of this Unit, a student should be able to:</p> <ul style="list-style-type: none"> <li>Describe work, power and energy</li> <li>Explain kinetic energy and potential energy</li> <li>describe conversion of energy</li> <li>describe principle of conservation of energy</li> <li>Solve mathematical problems concerning the relationships between work, power and energy</li> <li>conduct an experiment to measure the conversion of work and energy</li> </ul>			<p><b>4 Work and energy (5 period)</b></p> <p>How work is done in science (with examples)</p> <p>How work can be calculated</p> <p>Differentiation of work done in science and in daily life</p> <p>Rate of work done and calculation</p> <p>Capacity to do work and energy</p> <p>Comparison between Potential and Kinetic energy and their calculations</p> <p>Conversion of different types of energies: mechanical, chemical, nuclear, radiant, electrical, heat, light</p> <p>Principle of conservation of energy and its importance</p> <p>Application of simple machine(lever, pulley, inclined plane)to calculate mechanical advantages and efficiency of a machine</p> <hr/> <p>-----<b>Investigation (1 period)</b></p> <p>Class conducted in science laboratory</p> <p>Students experiment to measure the conversion of work and energy</p> <hr/>	<p>Using practical experiences to show how work is done in life and then in physical science</p> <p>Derive formula for calculating work done and set some problems</p> <p>Develop understanding of difference between kinetic energy and potential energy</p> <p>Ask students what they mean by rate, discuss the meaning of rate of work and calculate it</p> <p>Ask students what they meant by capacity, discuss the capacity of work and relate it with energy</p> <p>Exhibit some activities to show kinetic energy and potential energy and get students to do the same in group work</p> <p>Use common examples to illustrate conversion of energy into different forms and to derive principle of conservation of energy and its importance</p> <p>Ask students to give other examples</p> <p>Explain the principle of conservation of energy and its importance</p> <p>Ask students about the use of simple machines. Discuss how mechanical advantage and machine efficiency can be calculated.</p> <p>Students to solve mathematical problems, with teacher checking</p> <p><i>Resources; inclined plane; liver, pulley, dynamic cart, meter scale, stop Watch; different shaped materials; weight(60g, 80g, 1 00g, 120g etc.)</i></p> <p>Students are asked to plan and conduct an experiment to measure the conversion of work and energy. Teacher will provide necessary guide line.</p> <p><i>Resources; inclined plane; liver, pulley, dynamic cart, meter scale, stop watch; different shaped materials <u>weight(60g, 80g, 100g, 120g etc) and other necessary materials.</u></i></p>

UNIT 1 LET'S GET MOVING

Specific learning outcomes			Content	Recommended Teaching learning activities and resources
Cognitive	Personal	Social		
<p><b>Intellectual and problem solving skills</b> At the completion of this Unit, a student should be able to:</p> <ul style="list-style-type: none"> <li>explain how a satellite is kept in motion in a circular orbit</li> <li>explain the action of forces on a body when it is immersed in a liquid.</li> <li>carry out some experiments to investigate the principle of flotation.</li> </ul>			<p><b>5 Gravitation and satellite motion (3 periods)</b> Attraction between two particles and its calculation Acceleration due to gravity Cause and effect of its variation  Weightlessness Escape velocity  Orbiting the earth- how satellites stay in orbit</p> <p><b>6 Flotation (3 periods)</b> Forces acting on liquids when a body is immersed in liquid  Concept of up thrust and floating in liquid  Archimedes principle and formula  Apparent weight Principle of flotation and its application</p> <p>===== -----<b>investigation (1 period)</b>----- =====  Class conducted in science laboratory Investigation of principle of flotation</p>	<p>Check students' understanding about earth's attraction on matter and gravity and discussion Explain, with necessary figures, the gravitational law, concept of acceleration due to gravity and causes and effect of its variation Explain the concept of weightlessness and give example  Explain escape velocity  Explain what is satellite and how satellites stay in circular orbit Resource: Poster showing how a satellite maintain its motion in a circular orbit  Using activities and diagrams, develop understanding of how a body/object stays afloat in water and the forces acting on a body immersed in a liquid  Develop notion of meaning of up thrust and flotation  Explain Archimedes principle and derivation of formula and students do some calculations  Discuss properties of flotation and apparent weight and some applications of the principle of flotation Resources : round and rectangular shaped objects, large beaker, spring balance different liquids.  Students will be divided into different groups and ask- them to design and conduct an experiment to investigate the principle of flotation teacher will present and supervise.  Resources: round and rectangular shaped objects, large beaker, spring balance, different liquids.</p>

## Appendix E

### Major Observations, Principles and recommendations of the Report of the National Education Commission Reforms 2003

- *Objectives of education:* the main objective of education is to transform, within a short time, the country's manpower into human resources.
- *Education opportunities:* Equal opportunities, especially at the elementary level, must be ensured irrespective of religion, group, culture, male, female or geographical location.
- *Quality Education:* Necessary measures should be taken to maintain quality education in all levels.
- *Entrance age:* Every child is to be admitted to a school just on the day he/she reaches the age of 5.
- *Nationalization of primary school:* All primary schools should be brought under government management, finance and control.
- *Teacher Student Ratio:* In primary schools, the teacher student ratio should be 1:30 and in secondary schools this ratio is to be brought down at 1:40.
- *Aims and objectives of education:* Aims and objectives of education at the primary, secondary and higher levels should be clearly specified.
- *Framework of education:* The present framework of education is to be kept unchanged.
- *Different streams of Education:* The different streams of education now prevailing in primary and secondary levels create socio-economic disparities and are inconsistent with social equity. As it is not really possible to change the streams all on a sudden, a curriculum should be prepared aiming at maintaining equity in most of the educational streams.
- *Unitrack secondary education:* the principles of Unitrack secondary education should be adopted.
- *Educational opportunities in rural areas:* additional schools with public money should be established in places where opportunities for education are limited.
- *Model High School in rural areas :* One Model High School should be established at every Upazilla.
- *Teacher recruitment:* In all educational institutions, except in universities, teachers should be recruited through a neutral commission.
- *Quality education:* In order to ensure quality education, teachers should be properly trained. Teachers in primary and secondary levels should be especially trained in English, Mathematics and Science subjects. Short duration distant education may be introduced.
- *Use of Educational Technology:* There is no alternative to the extensive use of modern educational technology if enhancement of quality of education is to be achieved in a short time. A dedicated TV channel can be used for this purpose.
- *Work based education:* Secondary education should be designed in such a way as to help the dropouts to be employed in different social and profitable works.
- *Education and manpower:* It is imperative to formulate national policies for proper utilization of educated manpower of the country so that no educated person would be left unemployed.
- *Distant education system:* distant education system is to be introduced in different areas.
- *Teachers' dignity:* The pay scale, rules for promotion and service conditions should be commensurate with the needs to ensure dignity of the teachers.
- *Examination and evaluation system:* For all education streams, there should be uniformity in examination and evaluation.
- *Administrative Decentralization:* The Dhaka based administrative unit (especially for secondary and college level) should be decentralized so that
  - administrative power and discretions are not concentrated in the hands of a limited few
  - no confrontation will occur among different persons or organizations.
  - problems are solved quickly and locally.
  - school/college authorities or head teachers/principals should not get involved in politics or do not face anything untoward.
- *Information technology:* appropriate measure should be taken to implement the national policy on ICT within a short period.

- Public funded new and single subject based (e.g. aquiculture, engineering, medical science, etc.) universities should be discouraged since it is incompatible with the concept of university and is a sheer wastage of money.
- *Higher education at private sector:* Since higher education is expensive the private sector should be encouraged to become patron in this sector. But there should be institutional arrangement for ensuring quality of these institutions.
- *Neutral administration at university levels:* upholding the autonomous status of the universities and ensuring neutral administration.
- *To encourage research work:* infrastructure and facilities should be enhanced to make each public university a center of excellence in research of international standard.
- *Science Policies:* national science policies should be formulated in the light of the most modern knowledge and this is to be implemented immediately in the education and research institutions.
- *Continuous Teaching:* In order to educate the entire nation and to make it scientifically designed, a realistic continuous teaching process should be introduced through the use of modern audio-visual and information technology (radio, TV, Computer, Internet etc.).
- *Formation of permanent Education Commission:* A permanent Education Commission should be formed with the following basic functions:
  - to implement the recommendations of the commission
  - to review the impediments to acquiring education through the conduct of relevant research and to recommend remedial measures.