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# BANGLADESH TERTIARY EDUCATION SECTOR REVIEW

*Skills and Innovation for Growth*

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Skills and Innovation for Growth

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Education Global Practice  
South Asia Region



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## ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ADP	Annual Development Program
AIF	Academic Innovation Fund
BAC	Bangladesh Accreditation Council
BAU	Bangladesh Agricultural University
BANBEIS	Bangladesh Bureau of Education and Informational Statistics
BCPS	Bangladesh College of Physicians and Surgeons
BdREN	Bangladesh Research and Education Network
BNMC	Bangladesh Nursing and Midwifery Council
BTEB	Bangladesh Technical Education Board
BSMMU	Bangabandhu Sheikh Mujib Medical University
BUET	Bangladesh University of Engineering and Technology
CEDP	College Education Development Project
DGHS	Directorate General of Health Services
DME	Directorate of Madrasa Education
DSHE	Directorate of Secondary and Higher Education
DTE	Directorate of Technical Education
EHS	Education Household Survey
FCPS	Fellow of College of Physicians and Surgeons
FMRP	Financial Management Reform Project
FYP	Five-Year Plan

GB	Governing Body
GDP	Gross Domestic Product
GER	Gross Enrollment Rate
GoB	Government of Bangladesh
GPI	Gender Parity Index
HEQEP	Higher Education Quality Enhancement Project
HSC	Higher School Certificate
ICT	Information Communication Technology
IT	Information Technology
IQAC	Institutional Quality Assurance Cells
IP	Intellectual Property
LASI	Learning Assessment of Secondary Institutions
LMS	Learning Management System
MCPS	Member of College of Physicians and Surgeons
MDG	Millennium Development Goal
MoE	Ministry of Education
MoF	Ministry of Finance
MTBF	Medium-Term Budgeting Framework
NAEM	National Academy of Educational Management
NEP	National Education Policy
NSDA	National Skills Development Authority
NSDP	National Skills Development Policy
NSQAS	National Skills Quality Assurance System
NTRCA	Nongovernment Teacher Registration and Certification Authority
NTSC	Nongovernment Teachers Selection Commission
NTVQF	National Technical and Vocational Qualification Framework
PBF	Performance-Based Funding
PFM	Public Financial Management
PSC	Public Service Commission
R&D	Research and Development
RMG	Ready-Made Garments
SDG	Sustainable Development Goal
SHED	Secondary and Higher Education Division
STEM	Science, Technology, Engineering and Mathematics
STEP	Skills and Training Enhancement Project
TEI	Tertiary Education Institution
TIB	Transparency International Bangladesh
TMED	Technical and Madrasa Education Division
TVET	Technical and Vocational Education and Training
UDL	University Grants Commission Digital Library
UGC	University Grants Commission
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
VC	Vice Chancellor
WIPO	World Intellectual Property Organization

# CONTENTS

12

18

22

32

46

56

68

ii **ACKNOWLEDGEMENT**

ii **ABBREVIATIONS AND ACRONYMS**

vi **EXECUTIVE SUMMARY**

## **INTRODUCTION**

- 13 1.1. Background
- 14 1.2. Study Objectives and Approach
- 15 1.3. Study Methodology

## **TERTIARY GRADUATE SKILLS AND EMPLOYABILITY**

- 19 2.1 Job Market Outcomes of Tertiary Graduates
- 21 2.2 Relevance of Tertiary Education: Employers' and Graduates' Perception

## **ACCESS AND EQUITY IN TERTIARY EDUCATION**

- 23 3.1 Background
- 25 3.2 Key Issues in Access and Equity in Tertiary Education in Bangladesh
- 29 3.3 Policy Options for Promoting Equity in Tertiary Education
- 31 Bibliography

## **QUALITY AND RELEVANCE IN TERTIARY EDUCATION**

- 33 4.1 Background
- 34 4.2 Key Issues in Quality and Relevance in TEs in Bangladesh
- 42 4.3 Policy Options for Improving Quality and Relevance in TEs
- 44 Bibliography

## **RESEARCH AND INNOVATION IN TERTIARY EDUCATION INSTITUTIONS**

- 47 5.1 Background
- 47 5.2 Status of Research in Bangladesh
- 50 5.3 Key Issues in Research and Innovation in TEs in Bangladesh
- 53 5.4 Policy Options for Promoting Research and Innovation in Tertiary Education
- 55 Bibliography

## **GOVERNANCE AND MANAGEMENT IN TERTIARY EDUCATION**

- 57 6.1 Background
- 59 6.2 Institutional Governance and Management
- 61 6.3 Key Issues in Governance and Management of Tertiary Education
- 64 6.4 Policy Options for Promoting 'Good' Governance and Management in Tertiary Education in Bangladesh
- 65
- 67 Bibliography

## **FINANCING OF TERTIARY EDUCATION**

- 69 7.1 Background
- 70 7.2 Status and Issues of Financing in Tertiary Education in Bangladesh
- 75 7.3 Policy Options for Better Financing in Tertiary Education
- 76 Bibliography

78 **ANNEX**

## LIST OF FIGURES

- 15** Figure 1: Conceptual Framework
- 19** Figure 2: Unemployment Rates by Education Level (Left); Employment Status of Graduates after 1–2 Years of Graduation (Right)
- 21** Figure 3: Skills Employers Feel Polytechnics (left), Colleges (right), and Universities (below) should Train Graduates More On
- 21** Figure 4: Perception on Skills Relevant for Jobs among Employed Graduates (1 = Not Important; 4 = Highly Important)
- 24** Figure 5: Gross Enrollment Rate (GER) for Selected Countries and Region, 2016 (in percent)
- 25** Figure 6: Tertiary Education Enrollment Projection till 2040
- 25** Figure 7: GPI by Type of TEI in 2010 and 2015
- 26** Figure 8: Distribution of Enrollment across Income Groups, by Education Cycle
- 26** Figure 9: Distribution of Enrollment across Income Groups, by Institution Type
- 27** Figure 10: Students' Family Background among University and College Students
- 27** Figure 11: HSC Exam Performance (GPA) among Public University and College Students
- 35** Figure 12: Satisfaction Rating among Beneficiary and Non-Beneficiary Students (out of 4-point scale)
- 39** Figure 13: Employers' Perception of Skills Importance and Skills Sufficiency among Professional Workers in Bangladesh (Share of respondents, percentage)
- 48** Figure 14: Number of Citable Documents Published per Year by Bangladeshi Researchers, 1990–2015
- 49** Figure 15: Top 10 Research Areas by Volume of Citable Documents Produced in Bangladesh in 2015
- 51** Figure 16: Share of Funding Sources for Researches Published by Bangladeshi Researchers, 2015
- 58** Figure 17: Simplified Organogram of MoE for Tertiary Education

## LIST OF TABLES

- 20** Table 1: Average Current Gross Salary in BDT
- 23** Table 2: Number of Students and Institutions across TEIs in 2010 and 2017 in Bangladesh
- 24** Table 3: Proportion of Enrollments in STEM Courses in 2015
- 28** Table 4: Some of the Support Programs Available to Students in Public Tertiary Institutions
- 36** Table 5: Average Teacher-Student Ratio across the TEIs
- 37** Table 6: Computer and Internet Access across Tertiary Colleges
- 40** Table 7: Good Practices of Higher-Order Cognitive Skills and Soft Skills Training in Bangladesh
- 48** Table 8: H-Index for Selected Countries, 2015
- 49** Table 9: Number of Research Publications by Type of University in Bangladesh 2013
- 50** Table 10: Ranking of Patent Filing for Various Countries, 2013
- 51** Table 11: MoE Budget to Public University and Allocation to Research in Bangladesh (BDT, millions)
- 69** Table 12: Rate of Return to Additional Year of Education at Different Levels in Bangladesh
- 71** Table 13: Trend in Public Expenditure on Education in South Asia Countries
- 71** Table 14: Trend in Share of Tertiary Education in Total Education Expenditure (%)
- 72** Table 15: Annual per Student Education Expenses in Bangladesh (in nominal BDT)



# EXECUTIVE SUMMARY

# EXECUTIVE SUMMARY

## INTRODUCTION

**1. Bangladesh is recognized globally for its remarkable track record of socioeconomic development and potential for becoming an economic powerhouse in the region.** The economy has sustained impressive economic growth over the past three decades despite incidences of political conflict, natural calamities, and financial shocks. The country met the Millennium Development Goals ahead of time and reduced the poverty level substantially over the past decades. Progress in human development, education, and health has been equally impressive and produced a healthier and better-educated working population. More women are joining the workforce while gender gaps in pay are gradually narrowing. Moving forward, the country aspires to reach the stage of a developed economy in the next two decades.

**2. Bangladesh needs to prepare its workforce for the emerging challenges for a dynamic economy in an increasingly globalized world.** The economy is undergoing structural changes on several fronts. First, Bangladesh has transitioned from a largely traditional, agriculture-based economy to an industry and service-driven economy. Industry sector has been the main driving force for economic growth. Second, more recently, technological progress is rapidly changing the production and service modality. Firms need to not only constantly adjust their business and production modality with these technological changes but also have highly skilled manpower who can enable such change processes. Third, a growing and youthful workforce in Bangladesh provides a window of opportunity to improve productivity and accelerate economic growth. Equipping the young generation with the skills needed for jobs remains crucial.

**3. Tertiary education sector in Bangladesh is at crossroads.** On one hand, employers are demanding higher-skilled professionals for technical and managerial positions to support the growing industry and service sectors. On the other hand, tertiary education institutes (TEIs) are struggling to produce employable graduates for the job market. Unemployment rates are consistently high among tertiary graduates, causing prolonged and frustrating joblessness for many. At the same time, the culture and practice of collaborative research to promote industry competitiveness and innovation has been largely missing in the country's tertiary education landscape, undermining Bangladesh's competitiveness ranking in the global knowledge economy. There is urgent need to identify and address the challenges in the sector and orient tertiary education toward the demands of the economy and labor market to help realize Bangladesh's full economic development potential.

**4. This sector review aims to provide a holistic knowledge of the tertiary education sector in Bangladesh and identify key challenges and policy recommendations to support policy dialogue and future operations.** Building upon a conceptual framework, the review takes a holistic approach in assessing the challenges across three tertiary education providers—university, college, and polytechnics—across five areas of interest: access and equity, quality and relevance of education, research and innovation, governance and management, and financing. The main findings and key policy options across these five themes are summarized in the next section.

## MAIN FINDINGS AND POLICY DIRECTIONS

### ACCESS AND EQUITY

#### Key Findings

- **Tertiary education enrollment is growing rapidly, and private education providers, especially colleges, play a key role in absorbing much of the expansion.** A significant part of the expansion has occurred through enrollments in the tertiary college sector, which accounts for over 60 percent of all tertiary enrollments. Universities account for 30 percent of enrollments while polytechnics have the lowest share at 8 percent. Overall, there has been a growth in the enrollment in private providers, which account for 45 percent of all tertiary enrollments. Nonetheless, Bangladesh's participation in tertiary education in terms of gross enrollment rate (GER) (17 percent in 2016) is still quite low compared to neighboring countries such as India and Sri Lanka and not up to the average of lower-middle-income countries (24 percent).

- **Access to tertiary education is not equitable across gender and income groups, with females and students from poor families at a disadvantage.** The female share of enrollments across the TEIs stood at around 38 percent in Bangladesh, considerably lower than other South Asian countries such as India (46 percent) and Sri Lanka (60 percent). Moreover, tertiary education in Bangladesh has been dominated by students from the richest segment of society—the richest two income quintiles accounted for 75 percent of the total enrollment in tertiary

education, mostly in prestigious public institutions.

- **Participation in science, technology, engineering, and mathematics (STEM) is low.** This is particularly the case for tertiary colleges, which account for more than half of the tertiary enrollments. Just around 9 percent of college students are found to be enrolled in STEM courses. This would likely lead to an oversupply of graduates in humanities subjects and skills shortage for technology and engineering professionals in the industry sector.

#### Policy Options

To improve access and equity, the Bangladesh government may consider the following policy options:

- **Setting up a student loan scheme in partnership with public and private financial institutions** to support meritorious low-income students, especially females, and other marginalized groups to pursue higher education.

- **Expanding poverty-targeted scholarship and tuition support for students** to encourage low-income secondary school graduates, especially females, who are proven meritorious to continue with higher education in the universities and colleges.

- **Strengthening support for more equitable learning outcomes in secondary education**, for example, through using digital tools for disseminating high-quality programs to raise higher education

preparedness of secondary students from poor and rural family backgrounds; adjusting teacher pay parameters and teacher deployment regulation to render preferential benefits for teachers and schools in rural and disadvantaged areas; and promoting household investment in tertiary education through awareness for parents.

- **Diversifying academic pathways by gearing access to postsecondary education** in favor of enrollment in technical track and reducing the concentration of students in social subjects of less economic priority under the general education stream.

### QUALITY AND RELEVANCE

#### Key Findings

- **The teaching and learning and assessment systems largely follow the traditional and rigid approach that impede effective student learning.** Classroom teaching mainly involves rote learning, non-creativity, and passivity of students that impedes higher-order critical thinking and soft skills development. Assessment of learning is conducted mainly through written exams, providing little scope for feedback to students other than conventional grades. Some universities have taken proactive steps to implement active learning practices, which has been associated with higher student satisfaction with teaching-learning. Yet, such practices are completely missing in the tertiary colleges and polytechnics.

- **Inadequate and outdated teaching and learning facilities pose a significant challenge for the delivery of quality education.**

Student-teacher ratios are generally high across the TEIs, especially among public institutions. Without proper classroom facilities, such as speakers and multimedia, the delivery of lecture is hindered, making teaching and learning less effective. Especially in the provision of STEM, the quality of practical learning is hampered when students have little or no access to raw materials and lab facilities. Furthermore, access to high-quality Internet connectivity and digital resources is lacking especially in the tertiary college and polytechnic sector. Even where there is a good provision to these facilities, digital literacy remains low among teachers and students, leading to less uptake of digital facilities in teaching and learning.

- **Higher-order cognitive skills and soft skills are largely missing from the curriculum.** A growing body of evidence suggests that employers feel that the TEIs need to do more on improving higher-order cognitive skills of graduates, especially in areas of critical thinking, problem-solving, communications, and information and communication technology (ICT) skills, among others. While some private universities have explicitly incorporated such modules in their curricula, most TEIs still remain far behind.

- **Qualified teachers are in short supply and have little opportunities for professional development.** Teacher vacancy is high in the tertiary

colleges and polytechnics, especially in district towns and rural areas. The government adopts a central teacher recruitment process for public colleges and polytechnics, which can take up to two years, and turnovers during this time further exacerbate the vacancy situation. On the other hand, universities exercise autonomy in teacher recruitment; however, concerns remain on the transparency in teacher selection and recruitment process. Moreover, professional development opportunities are scarce and only intermittently provided for a small number of teachers in tertiary education.

- **Quality assurance in tertiary education is still at a nascent stage.** Noteworthy progress has been made in pushing the quality assurance agenda in higher education through the passing of the Bangladesh Accreditation Council Act in 2017. Several universities also took up internal quality assurance mechanism and conducted self-assessments involving student, teacher, and employers' feedback. While quality assurance has been advancing in the university sector, it has been largely missing in the tertiary colleges and polytechnics.

### Policy Options

Key policy options to enhance quality and relevance in tertiary education include the following:

- **Implementing modern practices in teaching, learning, and assessment** through implementing active learning in the classroom and a system for feedback to students—

inclusion of higher-order cognitive skills and soft skills development in the curricula and use of a learning management system for tracking student learning outcomes.

- **Increasing investments in teaching and learning and ICT facilities,** possibly through partnerships with private sector and fundraising and outreach programs. To attract private investments in education and collaboration, the government may consider special incentives (for example, tax rebate, recognition) for industry.

- **Attracting highly qualified teachers and increasing opportunities for teachers' professional development** through developing teacher competency requirements across subject areas and introduction of structured in-service professional training programs. There is a need to review the government teacher recruitment and promotion process for colleges and polytechnics to ensure teachers are attracted and motivated in the teaching profession.

- **Forging partnership with renowned foreign universities through twinning or joint programs is an effective means to raise the quality of teaching and learning in Bangladeshi universities.** Activities that promote knowledge transfer, exchange of experience, and capacity development could be explored.

- **Implementing the quality assurance mechanism in all TEIs** through the implementation of the BAC Act and introduction of quality assurance effectively across all TEIs.

## RESEARCH AND INNOVATION

### Key Findings

- **Bangladesh has been placing a firm foot in research and innovation over the past decade.**

Research outputs from Bangladesh have progressively increased between 1995 and 2005. However, in terms of global research standing, Bangladesh lags behind most South Asian countries, indicating that the strength of research produced by Bangladeshi academics is yet to be fully cultivated.

- **Research at universities has been grossly underfunded, undermining their capacity to conduct knowledge work even when many have a good number of faculty trained with advanced degrees and research experience.** There is a large pool of Bangladeshi academics with PhDs, many trained abroad and mostly concentrated in the established public universities, indicating the presence of untapped research potential in Bangladesh. However, the share of research grants in public funding to universities remained stagnant, well below 1 percent. Research facilities, including modern lab, equipment, and digital facilities, remain inadequate, making it challenging for academics to carry out and produce high-quality research.

- **Industry collaboration and private sector participation in promoting research and development (R&D) work and supporting commercialization of research output is at a nascent stage.** The experience of the

competitive innovation funds shows high potential for collaborative research between academia and industry through the emergence of innovation in the fields of medicine and agriculture. Despite this progress, Bangladesh ranks poorly and remains at the bottom tier (131 out of 140 countries) for university-industry collaboration in R&D, behind other South Asian counterparts such as India and Sri Lanka.

### Policy Options

Key policy options to promote research and innovation in tertiary education:

- **More and smart investments to support research and innovation in higher education are necessary.**

This would require an increase in public spending on enhancing research capabilities, including provision of scientific lab and facilities and research skills training in the universities. Furthermore, collaborative research with industry and foreign institutes should also be promoted to further supplement the shortfall of public research spending and support knowledge transfer and research capacity building.

- **Building enabling environment for commercialization of innovations through promoting academia-industry research and development and setting up intermediate organizations for commercialization of research, including Technological Transfer Offices.** In addition, intellectual property (IP) policy and management needs to be introduced for the tertiary education sector.

## GOVERNANCE AND MANAGEMENT

### Key Findings

- **The governance structure of tertiary education in Bangladesh is distinctly different across subsectors with administrative and academic authorities divided across multiple central agencies.**

Primarily, tertiary education is under the jurisdiction of the Ministry of Education (MoE). The MoE has two divisions, Secondary and Higher Education Division (SHED) and Technical and Madrasa Education Division (TMED), each headed by a permanent Secretary. The SHED is responsible for secondary education and higher education, while the TMED looks after technical and vocational education training (TVET) and Madrasa (Islamic religious education). The University Grants Commission (UGC), established in 1972,<sup>1</sup> is responsible for supervising and coordinating public and private universities, maintaining the quality standard of university education, managing the allocation of government funding to universities, and advising the government on issues related to higher education.

- **The legislative backbone and coordination mechanism of the tertiary education are fragmented.**

Various legislative frameworks govern the three subsectors creating governance structures, roles, and responsibilities of the various entities. Moreover, a large number of entities, complex governance structure, and an underdeveloped management capacity make effective administration and

<sup>1</sup> The 1973 President's Order No. 10 defines the role of the UGC as the lead coordinating agency in all matters of university education related to fund allocation, planning, development, and implementation of higher education and research programs in public universities as well as the monitoring of public and private universities.

coordination challenging at the central and institutional level.

- **Poor transparency and weak accountability mechanisms** are responsible for irregularities in major areas, including teacher recruitment, student enrollments, and student assessments in the TEIs. In the absence of proper accountability systems, state controls create rigidity in institutions' capacity to be responsive and flexible to human resource needs and academic program changes. Except for public universities, government tertiary colleges and polytechnics lack the autonomy to take and implement critical academic, human resource, and financial decisions. Moreover, highly politicalized environment in TEIs often lead to student and teacher protests and disruption that adversely affect the academic calendar.

### Policy Options

Key policy options to support enhanced governance and management system in tertiary education:

- **Bringing an umbrella legislation covering the different subsectors and institutions** to confirm the governance structures, roles, and responsibilities, as well as recognize quality assurance mechanism.
- **Strengthening management capacities at the ministry and institutional levels** through professional development opportunities for tertiary education managers and administrators and use of a management information system to improve monitoring and tracking of the three subsectors.
- **Increasing autonomy for high-performing colleges and**

**polytechnics in academic, personnel, and financial management.** Granting some autonomy with clear objectives and monitoring system may enhance such flexibility in responding to emerging demands from local situations.

- **Delinking teachers and students' affiliation with political parties and working** as the latter's front organization in universities through allowing students union to function on the campus only on a nonpolitical platform.

## FINANCING

### Key Findings

- **Public spending in education has not been necessarily prioritized toward tertiary education.** However, most recent data show a gradual shift toward greater resource allocation to tertiary education. Bangladesh's allocation of public expenditure for tertiary education in the total education expenditure had been in the range of 10–13 percent over the past decade, rising to 20 percent in 2015.

- **Private education expenses incurred by the households have been playing a significant role in funding tertiary education.** On average, tertiary education costs households 1.26 times more than higher secondary education does, proving to be an expensive investment for most families. Students in postsecondary often rely on borrowing from families and relatives to pay for various private out-of-pocket expenses. There is currently no national student loans scheme in Bangladesh to help students enrolled in tertiary education. Financial support to students are mostly provided in the form of

scholarship/stipend and waiver of fees.

- **The potential for income generation by TEIs has been underexplored, and the budget processing system of tertiary education is not incentivizing performance improvement in the TEIs.** In the absence of a policy or mechanism to support income-generation activities by TEIs in Bangladesh, the main income source for most of public TEIs, other than grant funding from the government, is fees charged to enrolled students in the form of registration, tuition, and examination. Moreover, the budget processing system largely follows the traditional funding method of incremental budgeting across fixed line items, with no mechanism for performance-based allocation.

### Policy Options

Key policy options to support enhanced governance and management system in tertiary education:

- **Exploring performance-based approach to financing TEIs, especially for the university sector to promote the core principles of efficiency, effectiveness, and accountability** in the utilization of financial resources, and driving the development of TEIs in alignment with the overall sector development objectives.
- **Granting more financial autonomy to high-performing TEIs** with good financial management capacities, especially to operate income-generating activities, explore innovative approaches to finance their plans, and promote creative ways of utilizing the financial resources at their disposal.

1

# INTRODUCTION

## 1.1. BACKGROUND

**1. Bangladesh economy exhibited noteworthy progress in poverty reduction supported by sustained economic growth and human capital development.** The national poverty rate declined from 44.2 percent in 1991 to 13.8 percent in 2017, lifting millions of people out of extreme poverty. This progress was underpinned by an impressive average annual gross domestic product (GDP) growth of above 6 percent over the past decade. At the same time, human development outcomes have also improved. Bangladesh has experienced the fastest decline in child and infant mortality rates among developing countries, attained near universal access to primary education, achieved gender parity in access at the primary and secondary education levels, and improved access to tertiary education for both males and females. Furthermore, women's participation in the workforce has also increased while the gap in wage differentials has declined.

**2. In an era of global knowledge economy, workforce skills and productivity are crucial to Bangladesh's quest to accelerate economic growth and move up within the middle-income bracket.** Economic growth is expected to continue with the creation of more jobs in rapidly growing sectors, including ready-made garments (RMG), export-oriented manufacturing, light engineering, shipbuilding, agribusiness, information and communication technology (ICT), and pharmaceuticals (World Bank 2018). Market expansion across these sectors will demand more and better-skilled professionals in managerial, technical, and leadership positions. As modern technologies change the way of work, Bangladeshi workers would need to adapt to these advancements for meeting the needs of a rapidly changing production environment and remain competitive.

**3. Bangladesh will need to focus on the development of the tertiary education sector in building the critical supply of high-skilled workforce and knowledge.** In Bangladesh, tertiary education is provided through three entities: diploma programs in polytechnics under the technical and vocational education and training (TVET) system, and graduate and postgraduate programs in universities and tertiary colleges under the general education system. Tertiary education institutes (TEIs) are the main entities for preparing the workforce with relevant skills and expertise needed to meet the changing technology and skills demands of the economy. Moreover, universities and in some cases, polytechnics, are also knowledge hubs for creating and disseminating new knowledge through cutting-edge research and innovation.

**4. There is growing pressure on the tertiary education system to rise to the needs of the economy in Bangladesh.** Demographic and economic changes have led to a gradual increase in the demand for postsecondary education, which in turn, is placing an increasing pressure on the system to meet access and quality demands. On the other hand, economic changes prompt employers to demand graduates with better skills and relevance to adapt to the needs of an evolving workplace environment, which creates an additional layer of pressure among the TEIs to meet quality standards. However, TEIs in Bangladesh still have a long way to go to become competitive in the global standards. International rankings of higher education institutions are an increasingly accepted indicator of the overall quality of universities in a country and to some extent, determine graduate reputation in the international job market. Bangladeshi universities are

performing below the average of global higher education rankings which may undermine the employability of graduates in local and global job markets. As of date, no university in Bangladesh has made it to the top 100 world universities' lists of well-accepted international rankings. These rankings are generally based on quality-based criteria such as learning environment, research output, industry collaboration, and international outlook.

**5. The Government of Bangladesh (GoB) recognizes the need for continuous investment into education and skills development as a key strategy to boost productivity.** To foster high-level skills development, investment in postsecondary education is of critical importance. To guide investment efforts toward postsecondary education, the government has made it a priority to implement key policy strategies. The National Skills Development Policy 2011 and the Strategic Plan for

Higher Education in Bangladesh 2018–2030 lay out the strategic development plan and approaches for TVET and university sectors, respectively. The government is now in the process of developing a sector development strategy for tertiary-level colleges. The goals of these sector strategies are consistent with the national development goal stated in the National Education Policy 2010 as well as in the current Five-Year Plan (FYR) (2016–2021). Achieving the development objectives of the national education policy and sector strategies will help propel economic growth and shared prosperity, as well as the Sustainable Development Goals (SDGs). Workforce development requires collaborative investments by different actors operating in the country (for details of the policy guidance in these key government policies, refer to Annex 1).

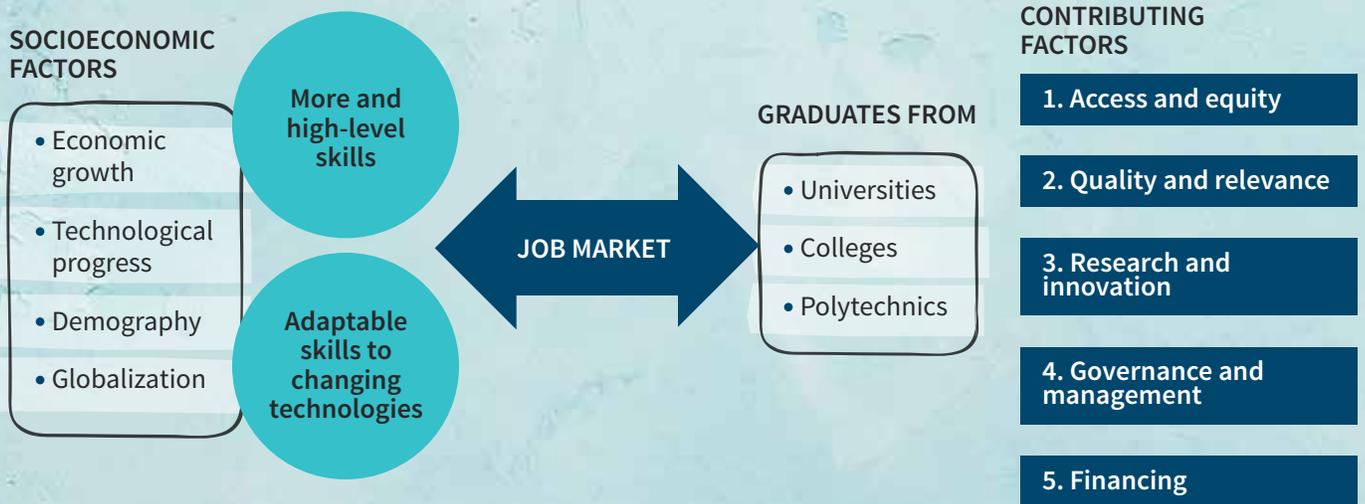
## 1.2. STUDY OBJECTIVES AND APPROACH

**6. Despite the growing importance of tertiary education in Bangladesh, available data and information about the sector have been scarce and scattered, and little attempt has been made to review all the tertiary education subsectors holistically.**

Against this backdrop, this study was commissioned to (a) provide a holistic sectoral review on three tertiary education and training systems (that is, universities, tertiary colleges, and tertiary TVET) in Bangladesh and (b) to lay out key policy recommendations aimed at addressing the identified challenges and opportunities. It is the expectation of the study that the identification of challenges and opportunities and actionable policies will inform the government and development partners for the preparation of development action plans for the tertiary education sector.

**7. Using this conceptual framework (figure 1), this review focuses on the five key thematic areas which influence the quality of graduates from TEIs:** (a) access and equity, (b) quality and relevance, (c) research and innovation, (d) governance and management, and (e)

financing. Responding to changes in the socioeconomic context (such as economic growth, technological transition, globalization, demographic transition, and increased labor mobility), Bangladesh is witnessing growing demands for high-level skills and adaptable skills to cope with new technologies. Such skills are chiefly supplied by graduates of TEIs. The level and quality of supply of TEI graduates are determined by the five key contributing factors—access and equity, quality and relevance of education and training, research and innovation to contribute to the knowledge economy, the adequacy and efficiency of financing, and efficacy of management and governance. Policy soundness and implementation performance of each of the five key thematic areas are important determinants of the quality of skills supply from the TEIs—universities, colleges, and polytechnics. Each chapter of this study is dedicated to one of the five thematic areas and consists of a brief description of background and current situation, followed by discussion on challenges and opportunities and finally, policy options and recommendations.



**Figure 1:** Conceptual Framework

### 1.3. STUDY METHODOLOGY

**8. The study is conducted primarily based on a range of existing household, education, and skills surveys, relevant literatures, and lessons learned from the World Bank-supported projects in the tertiary education space in Bangladesh.** The review includes policy, plans and strategies, existing studies, and pertinent records related to the higher education and skills training sector in Bangladesh. The study also draws on information from several national surveys, including the labour force survey (2010, 2015, 2017); enterprise-based skills survey; and three tracer studies of graduates from university, colleges, and polytechnics to provide analysis on the job market outcomes of tertiary graduates and employers' perception of graduate skills. In addition, the Education Household Survey (EHS) (2013) was used to analyze access and equity issues by individual and institute characteristics, while the household income and expenditure surveys (2003, 2010, 2015) were used for analysis of education financing. The study also utilized the database of Web of Science and Scimago to analyze the research standing of Bangladesh. In addition, the work has been supplemented by the analysis of administrative data and lessons learned from ongoing World Bank-funded operations in the postsecondary education sector in Bangladesh and around the world.<sup>2</sup>

**9. The study assesses the tertiary education sector holistically by covering all three subsectors that are universities, colleges, and polytechnics. In Bangladesh, the tertiary education can be broadly subdivided into three sections:** (a) universities, (b) colleges, and (c) polytechnics. Universities are autonomous entities that provide higher education and undertake research and innovation activities. Colleges are typically less autonomous teaching-oriented higher education entities that are affiliated academically and administratively to one of the affiliating universities which

underwrite their degrees. Polytechnics are tertiary-level technical and vocation education entities that offer diploma-level training programs. It had been typically the case that sector analyses were done individually for those three subsectors. However, from the perspective of skills supply capacity analysis, it would be imperative to view the subsectors as an integrated system which collectively strives to meet the demands of economy for highly skilled manpower. Moreover, as the study will discuss, there are a range of commonalities across the subsectors in terms of the strengths, challenges, and opportunities, especially in areas such as quality and relevance, and access and equity. The holistic analysis would be useful to ensure that cross-cutting issues are systematically identified, and shared policy options and approaches are generated to address those.

**10. The study also made a preliminary attempt, in the annex, to analyze economic sector-specific skills development issues by looking into the postsecondary vocational education and skills training aspects of the health sector as a case study.** Skills development is multisectoral by nature and highly relevant for most of the economic sectors spanning way beyond the traditional confines of the education sector as a skills supplier.<sup>3</sup> However, multisectoral analysis through the lens of skills development has rarely been conducted. It is an intention of this study, though limited in scope, to offer a template of cross-sectoral analysis on skills development agenda, which would ultimately lead to a comprehensive view of skills development landscape of the country. Gaining such a comprehensive understanding is an urgent necessity in the light of the need for promoting greater coordination in skills development and establishment of sectorwide approach for the skills development sector that the GoB is envisioning.

<sup>2</sup> The World Bank financing supports the GoB to implement three projects in postsecondary education in Bangladesh: Higher Education Quality Enhancement Project (HEQEP), Skills and Training Enhancement Project (STEP), and College Education Development Project (CEDP). HEQEP targets universities, while STEP and CEDP, respectively, target TVET and tertiary-level colleges.

<sup>3</sup> For instance, in Bangladesh, it is estimated that around 22 ministries are offering various types of vocational education and skills training.



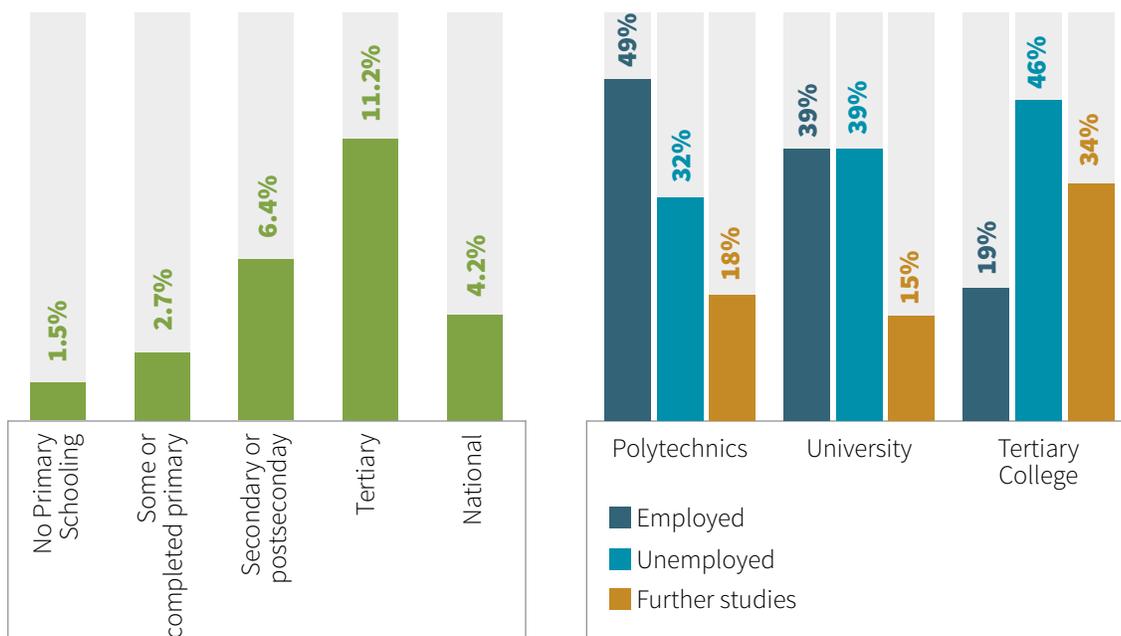
2

**TERTIARY  
GRADUATE SKILLS  
AND EMPLOYABILITY**

# TERTIARY GRADUATE SKILLS AND EMPLOYABILITY

## 2.1. JOB MARKET OUTCOMES OF TERTIARY GRADUATES

**11. Tertiary graduates in Bangladesh are struggling to find jobs.** According to the Labour Force Survey 2016–2017, the unemployment rate among those with tertiary education qualifications stood at 11.2 percent, much higher than the national average of 4.2 percent in 2017 (Figure 2). There is also a stark gender disparity in the sector. The unemployment rate for females stands at 21.4 percent, which is nearly three times as high as that for males (8.3 percent). Recent graduate tracking surveys also confirm the challenging job market environment for tertiary education graduates (see Figure 2). Regardless of the type of institution, more than a third of graduates are found to remain unemployed one or two years after graduation. Many are still on further studies to gain more skills and qualifications. It seems evident that graduate unemployment, possibly with a long-spell of joblessness, has become a fact of life for many tertiary education graduates in Bangladesh. Also, some important differences are observed across the types of institutions. Graduates from colleges appear to be particularly faring worse. Only 19 percent of college graduates are found to be employed full-time or part-time, while nearly half of them remain unemployed. Employment outcomes of tertiary-level technical education graduates appear somewhat better as polytechnic graduates are more likely to be employed than graduates from universities and colleges. Their advanced technical knowledge and skills may have helped them to be more attractive to employers.



**Figure 2:** Unemployment Rates by Education Level (Left); Employment Status of Graduates after 1–2 Years of Graduation (Right)

**Source:** Labour Force Survey 2016–2017 for unemployment rates (left); Graduate Tracer Studies (2016, 2017, 2018) for employment status (right).

**12. The majority of employed tertiary education graduates work in professional jobs in the private sector and education institutions.**

The graduate tracking survey revealed that more than two-thirds of employers of tertiary graduates are private enterprises or individually owned businesses. Most polytechnic graduates work in the manufacturing sector (29 percent) followed by construction (15 percent). Education institutions (that is, primary and secondary schools, colleges, and training institutes), both private and public ones, employ large portions of tertiary education graduates. Female polytechnic graduates are more concentrated in the education sector (32 percent) where they are hired as instructors and trainers. For university and college graduates, education institutions employ the largest share of graduates. Around 23 percent of university graduates and 43 percent of college graduates are working in the education sector. The next largest employer of university and college graduates is the manufacturing sector with around 17 percent of university and college graduates employed. Within the manufacturing industry, RMG, food products, agroprocessing business, and pharmaceuticals are the main employers.

**13. Employed tertiary education graduates generally make decent earnings, with university graduates and male graduates generally faring significantly better.**

Most of tertiary education graduates make at least around BDT11,000 per month within one or two years after graduation (Table 1). This level of income is comparable to the average national monthly earnings. The value of qualification does not seem uniform, however. Unsurprisingly, university graduates earn significantly more than graduates from colleges or polytechnics. On average their earnings are three times as high as that of tertiary college or polytechnic graduates. A university

**Table 1:** Average Current Gross Salary in BDT

	All	Male	Female	GPI
Polytechnics	10,843	11,088	8,308	0.75
Colleges	11,814	12,819	10,166	0.79
University	29,932	29,950	29,354	0.98

Source: Graduate Tracer Studies in respective sectors (2016, 2017, 2018).

Note: GPI = Gender Parity Index.

graduate earns on average around BDT 29,932 per month with no significant gender wage gap.<sup>4</sup> On the other hand, gender wage gaps are significant among employed graduates from college and polytechnics, especially among those who are not full-time permanent employees.

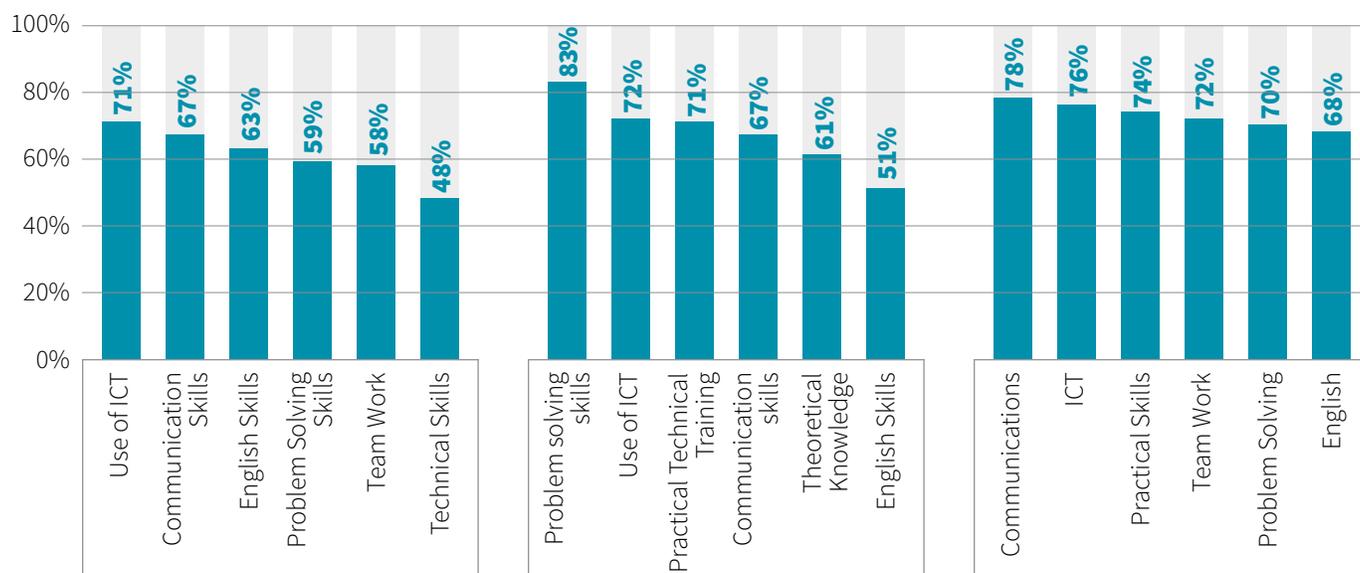
**14. Long spells of unemployment are common among unemployed tertiary graduates and cast serious doubts about job readiness and relevance of skills of graduates from tertiary education.**

Graduate tracking surveys found that around 75 percent of polytechnic graduates, 30 percent of college graduates, and 20 percent of university graduates have experienced joblessness that lasted more than a year. While most graduates continue to look for jobs, many opt for attaining higher levels of education in hopes of better credentials leading to jobs. More education does not also seem to mean more diversified learning experience and in some cases, not necessarily finding a job. For example, most of college graduates who opted for higher education such as a master’s degree would end up being enrolled in the same college from which they graduated for undergraduate programs and also, in the same subject area that is directly related to the area of their undergraduate study. Such high incidence of prolonged unemployment among graduates raises grave concerns about the job readiness and relevance of skills that TEIs in Bangladesh impart to their students.

<sup>4</sup> The national average monthly income for people of ages between 25 and 34 was around BDT 12,800 in 2016, according to the Labour Force Survey.

<sup>5</sup> Bangladesh Institute of Development Studies. 2018. Tracer Study of University Graduates. Higher Education Quality Enhancement Project. Dhaka. Bangladesh.

## 2.2. RELEVANCE OF TERTIARY EDUCATION: EMPLOYERS' AND GRADUATES' PERCEPTION

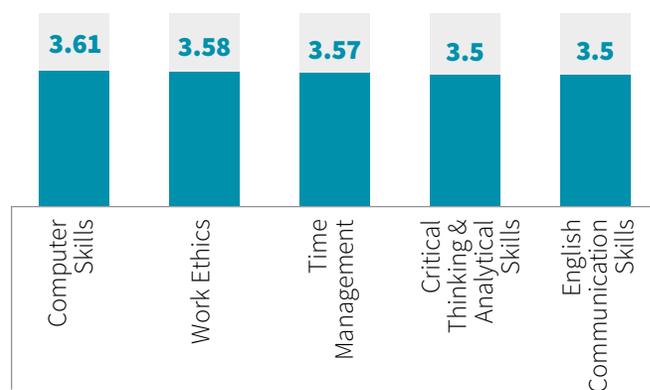


**Figure 3:** Skills Employers Feel Polytechnics (left), Colleges (right), and Universities (below) should Train Graduates More On

Source: Graduate Tracer Studies in the respective sectors (2016, 2017, 2018).

### 15. Employers emphasize that the skills of tertiary graduates, especially higher-order cognitive and soft skills, are not sufficient.

Employers rank three higher-order cognitive and soft skills as top three skills that are relevant for current work environment: (a) problem solving and independent thinking, (b) work attitude, and (c) positive personality (BIDS, 2018)<sup>5</sup>. However, employers are struggling to find graduates with these skills. For example, around 80 percent of employers of polytechnic graduates felt that problem-solving skills is a key area where polytechnics need to do more to train students (Figure 3). Similarly, employers would like universities and colleges to strengthen skills training on ICT, English language skills, and key higher-order thinking skills such as communication skills, problem-solving, and team work skills.



**Figure 4:** Perception on Skills Relevant for Jobs among Employed Graduates (1 = Not Important; 4 = Highly Important)

Source: University Graduate Tracer Study, 2018.

### 16. Graduates also realize the importance of higher-order cognitive and soft skills for success in jobs.

The graduate tracking surveys asked graduates about the types of skills that they see as most important for the work that they do. Out of 22 skills, university graduates rank computer skills, work ethics, time management, critical thinking and analytical skills, and English communication skills as the top five important skills for their jobs (Figure 4). At the same time, most graduates felt that they lack in these important skills and wanted to acquire these

through further education and training. Sixty-seven percent of university graduates were interested in taking up further training on computer skills while another one-third were interested in trainings to improve communication skills. There is clearly a need to upgrade the academic programs to support the development of these critical job-demanded skills and respond to fill the perceived skills gap among graduates.

3

# ACCESS AND EQUITY IN TERTIARY EDUCATION

# ACCESS AND EQUITY IN TERTIARY EDUCATION

## 3.1. BACKGROUND

**17. Enrollment in tertiary education is growing rapidly in Bangladesh, and private education providers, especially colleges, play a key role in absorbing students.** The total number of tertiary education students increased from 1.57 million in 2010 to 2.92 million in 2017 (Table 2). An increasing pool of higher secondary school graduates has led to more students pursuing tertiary education (World Bank 2014). Pressure to expand access to tertiary education will likely only grow for the foreseeable future. At the current rates, it is predicted that this demand will continue to grow as the share of youth population with tertiary education increases from 11 percent in 2010 to 20 percent in 2035 (World Bank 2017). In the meantime, the number of TEIs has also grown by over 40 percent since 2010 to over 2,800 institutes by 2017. Among them, colleges account for around 65 percent of the tertiary education institutions (TEIs) and the majority (around 60 percent) of student enrollment in tertiary education—the reality that has not changed fundamentally since 2010. This is largely due to the relatively high number of colleges distributed all over Bangladesh that makes access to these institutions easier for students. Private education providers are increasingly playing an important role in tertiary education in Bangladesh. The share of private enrollments in total tertiary student enrollments has increased, and as of 2017, close to half (44 percent) of the tertiary education students are enrolled in private institutes. Also, private education providers continue to account for much of the TEIs.

**18. Among the three subsectors, enrollments in technical education is still low.** The share of polytechnic enrollments in tertiary education stands at only 8.5 percent. Unlike university and tertiary colleges under the general education stream, the technical education sector suffers from additional challenges of low perceived social value and inadequate awareness on technical degrees among students and families. As a result, secondary school graduates are more likely to enroll in general education under a college than in a technical diploma program under a polytechnic (CAMPE

**Table 2:** Number of Students and Institutions across TEIs in 2010 and 2017 in Bangladesh

Subsectors	Student Enrollments				Institutions			
	2010		2017		2010		2017	
	Total (in millions)	% of Private	Total (in millions)	% of Private	Total	% of Private	Total	% of Private
Universities	0.46	43	0.86	39	82	62	135	70
Colleges	1.01	39	1.81	45	1,388	85	1,862	85
Polytechnics	0.10	33	0.25	57	205	72	835	92
<b>Total</b>	<b>1.57</b>	<b>40</b>	<b>2.92</b>	<b>44</b>	<b>1,675</b>	<b>83</b>	<b>2,832</b>	<b>86</b>

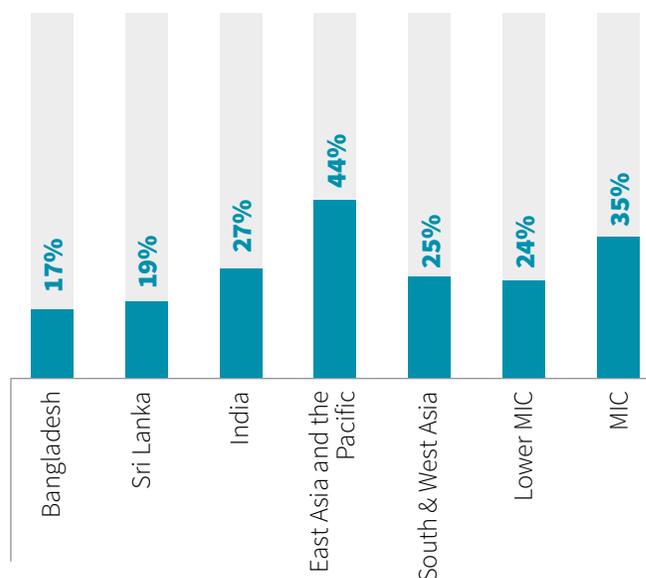
*Source:* Bangladesh Bureau of Educational Information and Statistics (BANBEIS) (2010, 2017).

*Note:* (a) Polytechnics include tertiary-level professional training courses offered by noneducation line ministries, which collectively enrolled 0.04 million students in 2017; (b) in addition, the religious education ('Madrasah') in Bangladesh has its tertiary equivalent courses ('Fazil' and 'Kamil') which enrolls 0.16 million students in 2017.

2012). Tertiary colleges have a bulge in enrollments, especially in humanities, leading to an oversupply of graduates in sectors of less economic priority. On the other hand, the job market is demanding more technical workers to support industry and service sector expansion. This is further substantiated by tracer studies that show that employment outcomes for polytechnic graduates are relatively better compared to tertiary college graduates (World Bank 2018a and 2018b).

**19. Despite the progress, Bangladesh remains behind other countries in the global and regional comparisons in tertiary education enrollment.** Bangladesh's enrollment in tertiary education stands at around 17 percent in 2016 trailing behind neighboring countries such as India (27 percent) and Sri Lanka (19 percent) and not up to the average of lower-middle-income countries (24 percent) (Figure 5).

**20. Across academic disciplines, overall participation in science, technology, engineering, and mathematics (STEM) is low.** There is a good balance of STEM and non-STEM enrollments in the public and private universities; however, STEM enrollment in tertiary colleges is in a dire situation. Table 3 shows that STEM enrollments as a share of higher education enrollments stands at 21 percent, lower than other South Asia Region countries such as India (40 percent) and Sri Lanka (28 percent).<sup>6</sup> While tertiary colleges account for nearly two-thirds of all tertiary enrollments, only around 9 percent of all college students are studying STEM. According to a survey on tertiary colleges, high costs of offering STEM programs is one of the prime reasons, among others, for which colleges, specifically private ones, prefer providing humanities or business programs (World Bank 2014).



**Figure 5:** Gross Enrollment Rate (GER) for Selected Countries and Region, 2016

*Source:* United Nations Educational, Scientific and Cultural Organization Institute for Statistics (UNESCO UIS) database.

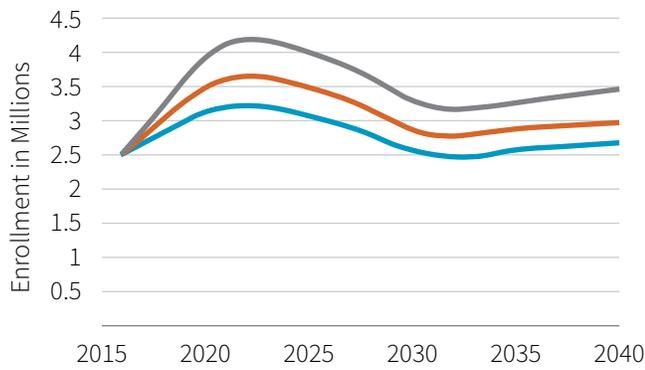
**21. Tertiary education enrollment is estimated to continue to grow especially over the next five years.** Under all different hypothetical scenarios of tertiary GERs, tertiary education enrollments are expected to grow over the next two decades (Figure 6). Due to the demographic transition, however, under every GER assumption, the total tertiary enrollment is estimated to reach its maximum in the next five years at around 3.2 to 4 million students. Beyond that point, the total tertiary enrollment will likely start to decline or at least remain constant due to demographic shifts in younger school-age generations.

**Table 3:** Proportion of Enrollments in STEM Courses in 2015

	Public University	Private University	Tertiary Colleges	Total Tertiary
Total enrollment (in millions)	0.49	0.38	1.7	2.75
Enrollment in STEM (in millions)	0.24	0.17	0.16	0.56
Enrollment in STEM (%)	48	44	9	21

*Source:* UGC Bangladesh, 2016.

<sup>6</sup> University Grants Commission (UGC) of India, 2016; University Grants Commission (UGC) of Sri Lanka, 2014.



- Pessimistic Scenario: No improvement in tertiary enrollment rate
- Medium Case Scenario: 2 percentage point improvement every 5 years
- Optimistic Scenario: 5 percentage point improvement every 5 years

**Figure 6:** Tertiary Education Enrollment Projection till 2040

*Note:* The estimates are based on the official population projection and hypothetical tertiary GERs. The population projection is from the Bangladesh Bureau of Statistics data. The base tertiary GER is 17 percent as of 2016.

## 22. Rapid expansion of access to tertiary education has risked the suboptimal allocation of resources and prevalence of poor quality service in tertiary-level education.

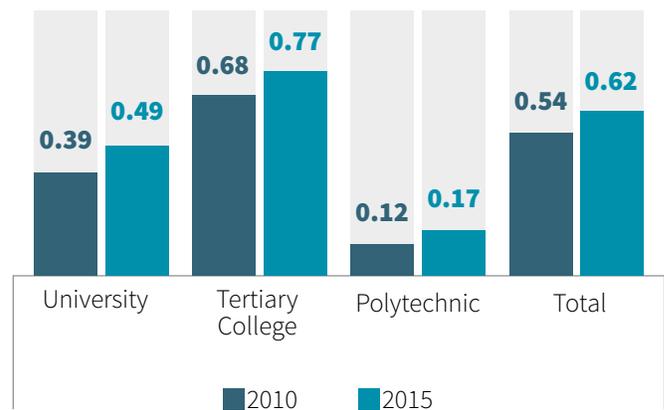
Much of the expansion in tertiary education has already occurred without significant investments for raising quality in the sector. While student enrollment increased by nearly 75 percent, the public allocation to tertiary education grew by only 52 percent between 2010 and 2015.<sup>7</sup> The major share of this public funding increase was spent on nondevelopment purposes, leaving very little investments for quality-enhancing activities essentially needed to keep up with the enrollment pace. With tertiary enrollments predicted to continue to rise over and reach a peak over the next few years, it will be critical to increase investments for enhancing the capacity and quality of providers.

## 3.2. KEY ISSUES IN ACCESS AND EQUITY IN TERTIARY EDUCATION IN BANGLADESH

### 3.2.1. Gender: Females are disadvantaged in access to tertiary education

#### 23. Access to tertiary education is not equitable across gender, with females at a disadvantage.

Female share of enrollments across the TEIs stood at around 38 percent in Bangladesh, considerably lower than other South Asia Region countries such as India (46 percent) and Sri Lanka (60 percent).<sup>8</sup> Across the three segments of tertiary education in Bangladesh, tertiary colleges are faring better in terms of closing the gender gap as indicated by the GPI of 0.77 (Figure 7). Universities and polytechnics have exhibited only slight improvements in GPI between 2010 and 2015 (Figure 7). Societal norms often restrict mobility among young girls to metropolitan cities or district towns, where most universities and polytechnics are located. Tertiary colleges, on the other hand, are distributed down to the subdistrict level (upazila), which make these institutions the only accessible higher education provider for girls, especially those from rural areas (World Bank 2015). The share of female enrollment



**Figure 7:** GPI by Type of TEI in 2010 and 2015

*Source:* BANBEIS, respective year.

*Note:* GPI is calculated as female enrollment/male enrollment. GPI of 1.0 means perfect gender parity.

<sup>7</sup> In 2010, the allocation to tertiary education in the national budget was BDT 102 billion, which increased to BDT 156 billion in 2015.

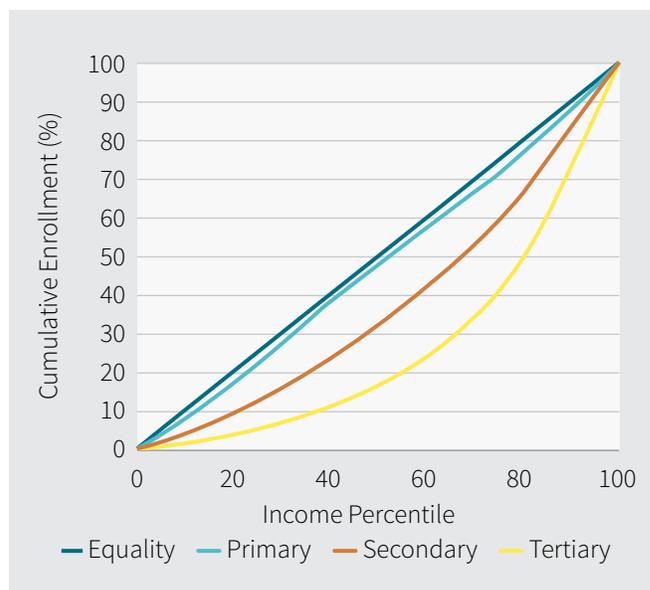
<sup>8</sup> All India Survey on Higher Education 2015–2016; UGC Sri Lanka Higher Education Statistics, 2015.

in the final year of higher secondary education (Grade 12) was 49 percent (GPI 0.96) in 2016. Female students outperform their male peers in Higher School Certificate (HSC) national examination results almost every year. As such, the considerable drop in GPI in tertiary education suggests the existence of strong social and economic barriers against females' higher studies.

### 3.2.2. Family background: Well-off students are hugely overrepresented in tertiary enrollment

#### 24. Students from the richest segment of the population are overrepresented in tertiary education, and even more so at more prestigious institutions.

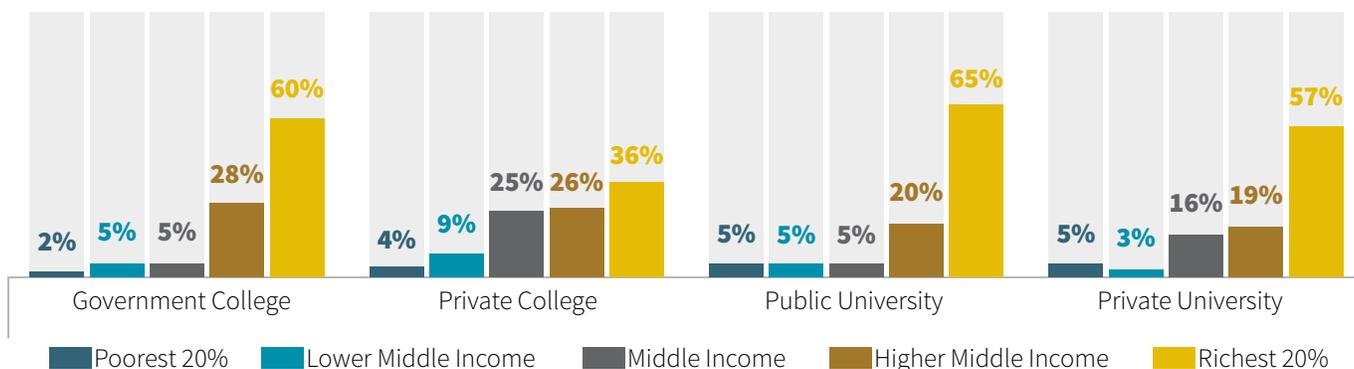
Tertiary education in Bangladesh has been dominated by students from the richest segment of society. It is significantly more unequal than secondary education which is also hard to attain for low-income students. In fact, a household survey reveals that the richest two income quintiles accounted for 75 percent of the total enrollment in tertiary education, and even more strikingly, students from the richest households capture over half of the entire tertiary enrollment in Bangladesh (Figure 8). Furthermore, not only are richer students gaining more admission to TEIs, they are also enjoying greater access to prestigious institutions. Enrollment in public universities are more strongly skewed toward the rich as 85 percent of those studying in public universities are from the richest two quintiles and around 65 percent are from the richest households. Enrollment in public colleges are also greatly in favor of the richer groups (Figure 9). On the other hand, private colleges, which are often deemed less prestigious and equipped with poorer learning facilities,



**Figure 8:** Distribution of Enrollment across Income Groups, by Education Cycle

Source: Author's calculation based on EHS 2013.

cater to the greater shares of students from less-affluent households. As such, knowledge and skills that students can gain out of tertiary education, and by extension, employment opportunities after graduation and return on education investment, are most likely severely unequally distributed. Moreover, the fact that poorer groups are more concentrated in private institutions further exacerbates the equity problem not least because public tertiary education in Bangladesh is highly subsidized by the government, while private institutions enjoy little government subsidies.

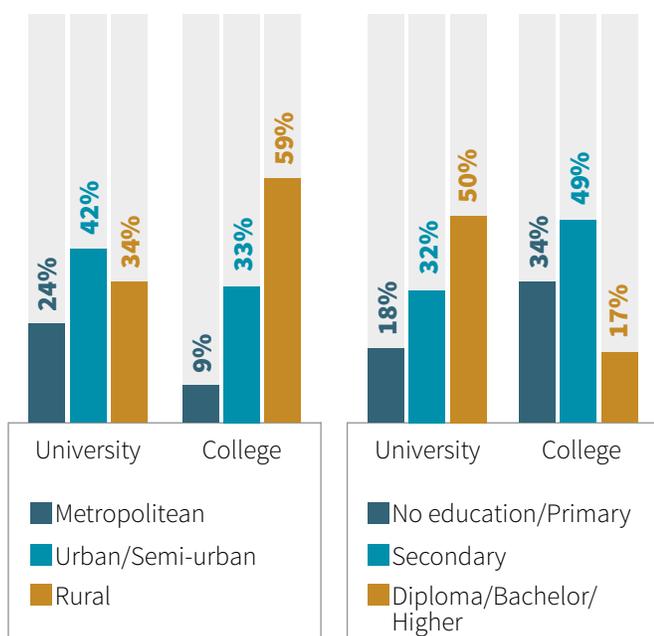


**Figure 9:** Distribution of Enrollment across Income Groups, by Institution Type

Source: Author's calculation based on EHS 2013.

**25. In terms of other family background, university students tend to come from more educated and urban families, while college students have more humble family backgrounds.**

while college students have more humble family backgrounds. Around two-thirds of university students come from urban families, and their parents have considerably higher levels of educational qualifications—around 50 percent of their fathers have a bachelor’s degree or higher (Figure 10). In comparison, around 60 percent of college students are from rural families, and only 17 percent of their fathers hold a tertiary degree. Even though parents of college students are considered better educated by Bangladeshi general population standards, it is in a staggering contrast with those of university students. It is obvious that the intergenerational educational mobility, especially for university education, has been a constraint in Bangladesh. If one is born into a family with parents having only primary education or less, which is the case for many of the Bangladeshi population, one would not stand a reasonable chance to enroll in a university. Such a lack or limitation of intergenerational social mobility is a grave concern and danger to the realization of inclusive development in Bangladesh.

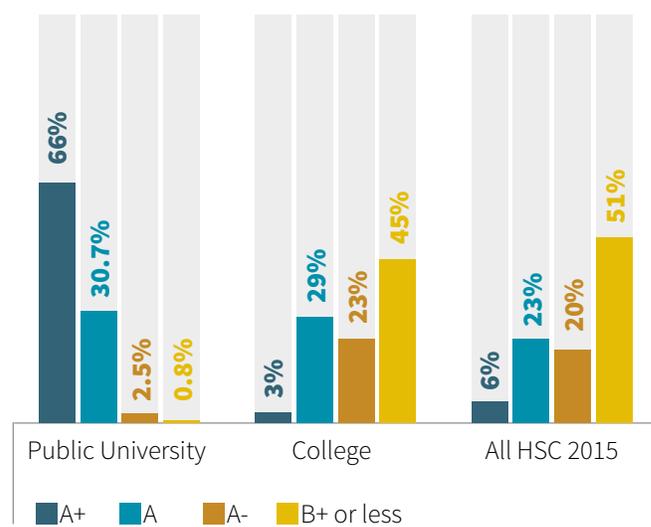


**Figure 10:** Students’ Family Background among University and College Students

Source: Graduate Tracer Studies in respective sectors (2017, 2018).

**26. University admissions are highly competitive, practically reserved for the top performers of secondary education, while colleges mostly cater to academically average performing secondary completers.**

Figure 11 shows the distribution of HSC exam results of public university and college students at the point of entry in tertiary education. University entrance is extremely competitive. For instance, among the entire HSC examinees, only 6 percent managed to receive GPA-A+ in 2015. However, as much as 66 percent of public university students are GPA-A+ achievers at their HSC exam. Admission to tertiary colleges are open to average performers. It is no surprise that prestigious institutions admit only academically most qualified students. From the equity perspective, however, it is alarming as academic performance of students is strongly correlated with their socioeconomic background in Bangladesh as in most countries,<sup>9</sup> and the prevailing practice of private tutoring in secondary education exacerbates it. Previous studies also found that enrollment into universities, especially public universities, is highly competitive and often considered less accessible for students from low-income rural families (World Bank 2017). In other words, inequality of access to university education across socioeconomic backgrounds has its roots primarily



**Figure 11:** HSC Exam Performance (GPA) among Public University and College Students

Source: Graduate Tracer Studies in respective subsectors (2017, 2018); BANBEIS (2015) for all HSC 2015.

<sup>9</sup> Learning Assessment of Secondary Institutions (LASI) 2015 report shows that socioeconomic factors such as parental education and urban residence have significant positive impact on students’ academic competencies.

in earlier education cycles especially in secondary education, during which richer urban students tend to get ahead academically.

**27. On the other hand, polytechnics provide a more affordable pathway to academically strong students from modest family backgrounds to attain a postsecondary educational qualification.** A survey shows that polytechnic students are generally high performers in secondary education.<sup>10</sup> Around 70 percent of polytechnic students achieved grade A or higher which can be considered as a good result in the terminal exam. In addition, more than half of them are from the science stream of secondary education. However, their background is usually humble and more so than that of college students. Most of these students (around 67 percent) come from families living in rural areas who have fathers working in agricultural, forestry, and fishery sectors. Around 44 percent and 58 percent of fathers and mothers have only primary educational qualification or less.<sup>11</sup> The diploma engineering courses in Bangladesh take four years to complete after Grade 10. It allows

students to attain a postsecondary degree faster than going to colleges, and thus offers a more affordable education option for students who cannot afford to forgo earnings for too many years.

### 3.2.3. Financial support for tertiary education students are available on a limited scale

**28. Financial support to students enrolled into public TEIs in Bangladesh comprises conditional stipends and scholarships (national and international).** Stipends and nationally initiated scholarships are available in public TEIs. In addition, students enrolled in universities may have access to international scholarships. The international scholarships are from different parts of the world, that students can compete for, depending on whether they fit the eligibility criteria or not. The nationally initiated stipends and scholarships are aimed at helping students enroll and complete their respective courses/degree programs. Table 4 illustrates some of the support programs currently available to students enrolled into public TEIs.

**Table 4:** Some of the Support Programs Available to Students in Public Tertiary Institutions

	Student Support Programs	Targeted Subsector			Remarks
		University	TVET	College	
1.	International scholarships	X			For master's and PhD programs
2.	Prime Minister's Trust Fund	X	X	X	For talented students who cannot afford tertiary education
3.	Merit-based stipend	X	X	X	Awarded to students who excel academically
4.	Poverty Fund	X	X	X	Targeted to socioeconomically disadvantaged students
5.	Stipend for Children of Liberation Heroes	X	X	X	For children of liberation heroes to attend tertiary education
6.	Tuition waivers for underserved population	X	X	X	For children of freedom fighters, disabled students, and minorities
7.	Stipend for special population		X	X	For religious and ethnic minorities, physically disabled, blind, and other marginalized groups
8.	Female Stipend Project	X	X	X	For females enrolled in a three-year bachelor's degree program in the national and Islamic universities
9.	Blind stipend	X			Offered to university students who are visually impaired

Source: UGC, DTE, and DSHE (2017).

<sup>10</sup> According to Polytechnic Graduate Tracking Survey, 2016.

<sup>11</sup> According to the Labour Force Survey 2015, 38 percent of the population have no education qualification, while 29 percent hold only primary education, 14 percent hold junior secondary, and 13 percent have secondary education.

**29. The Private University Act 2010 mandates private universities to allocate scholarships/stipends, to offer tuition fee waivers and to allot admission quota to ensure equitable access.** The tuition fees in private universities, on average, are more than five times that of public universities, as discussed later. Private universities provide fully or partially waived tuition fees for students who are meritorious but unable to afford the cost of higher education. They also offer scholarships/stipends to children of freedom fighters. About 20 percent of private school students were eligible for stipends (Boye and Mannan 2014). This has contributed to the expansion of equitable access to tertiary education, especially in the context of university education.

**30. There is currently no national student loans scheme in Bangladesh to help students enrolled into tertiary education.** Financial support to students are mostly provided in the form of scholarship/stipend and waiver of fees. In fact, the National Education Policy envisions the provisions of interest-free or low-interest student loans to the poor to meet the challenges of access and equity to tertiary education, especially among socioeconomically disadvantaged groups and females.

### 3.3. POLICY OPTIONS FOR PROMOTING EQUITY IN TERTIARY EDUCATION

**31. Despite improvements in enrollments, considerable gains are yet to be made regarding access to tertiary education, especially for females and students from socioeconomically disadvantaged families.** Access to quality tertiary education to all deserving students is now important more than ever in the age of rapid technological advances because technologies may well replace or push down the wage of many of those low-skilled routine jobs. The following policy options could be considered to improve equitable access to tertiary education in Bangladesh.

**32. Establishing a subsidized student loans program for meritorious low-income and other marginalized groups.** Student loans programs have been introduced in many developing and developed countries with an intent to alleviate financial constraints of poorer families (Box 1). The GoB should consider setting up a student loan scheme in partnership with public and private financial

institutions to support meritorious low-income students, especially females, and other marginalized groups to pursue higher education. Subsidized interest rates would be provided to low-income students. Given the high returns to tertiary education in Bangladesh, providing such loans would make economic sense to both students and the government. The scheme needs to be designed carefully with in-depth analysis of lessons learned from the international experience and taking account of the country's social context to build in an effective incentive system and efficient collection mechanism for better repayment. Success of the student loans program ultimately hinges upon repayment. From that perspective, rocky school-to-work transition and prolonged

## BOX 1

### Good Practices in Government-supported Student Loan Schemes

Many countries have introduced government-funded loan schemes to support access to higher education for students from modest family backgrounds. The South African government administers a student loan program which uses a means test to identify only needy students. The size of the loan differs by income levels, where students from low-income families will get higher loan than those from high income. The loan is also tied to academic performance, whereby loans are converted to grants for successful students, while those with poor academic performance do not receive loan for repeating courses. On the other hand, countries like Ghana, Sweden, and Australia use ability-to-pay principle, whereby repayments are capped between 2–4 percent of graduate income and the rate applied depending on how much the graduate earns. Australia has proven success with the scheme by introducing cost sharing in higher education while also increasing enrollments by 30 percent in five-year period.

joblessness among graduates can imperil the viability of loans provision for students in the medium to long term.

**33. Expanding poverty-targeted scholarship and tuition support for students.** Scholarship and tuition support have been a popular demand-stimulating instrument for vocational and technical education in Bangladesh as well as secondary education. For example, stipends conditional upon student attendance and performance helped increase female participation in technical diploma programs from less than 5 percent in 2010 to 14 percent in 2017. This can also be tested and expanded to encourage low-income secondary school graduates, especially females, who are proven meritorious to continue higher education in universities and colleges. In addition to expanding public support for needs-based scholarships, private universities should be further encouraged and incentivized to provide poverty-targeted scholarships who meet the background characteristics. The Private University Act mandates private institutions to offer scholarships to its students. Scholarship and tuition waiver practices of private universities can be analyzed to identify strategies on how to promote more needs-based scholarships and tuition waivers.

**34. Strengthening support for more equitable learning outcomes in secondary education.** More needs to be done to raise learning outcomes of poorer segments of secondary students, so more students from poorer and rural areas have a fair shot at higher education in reputed institutions. Use of information technologies and digital tools for disseminating high-quality programs to this population could enhance access to quality teaching contents and improve preparedness for admission into top institutions among aspiring disadvantaged students. Adjusting teacher pay parameters and teacher deployment regulation to render preferential benefits for teachers and schools in rural and disadvantaged areas would positively affect learning experience in those areas. Sensitizing less-educated parents about the value

of higher levels of education would also be important to promote household investment in education.

**35. Focusing on ‘quality’ for equitable access to good programs, especially for academically average students in tertiary colleges.** As tertiary enrollments are expected to rise over the next few years, affiliated colleges will likely absorb the majority of this demand, especially students from academically average-performing groups. With already low-quality environment in the colleges, it becomes of utmost importance to increase investments in improving teaching-learning in these institutions to ensure equitable access to quality programs and effectively manage expansion. Teaching and learning culture of colleges must be transformed from an examination-centric one to an employability-oriented one, especially through priority investments in programs catering to jobs in high-demand economic sectors. Moreover, reformation of governance and quality assurance mechanisms would need to be in place to support equitable access to quality college education.<sup>12</sup> The government is currently drafting a sector strategic plan for the affiliated colleges which would lay out action plans for improving quality of this expanding system of mass higher education.

**36. Diversifying academic pathways toward more technical avenue.** The technical and vocational education track of postsecondary education has been less popular among secondary students. From the viewpoint of more balanced human capital development, it would make sense to gear access to postsecondary education in favor of enrollment in the technical track and reduce the concentration of students in social subjects of less economic priority under the general education stream. It is also the government’s policy to increase enrollment in technical and vocational institutions to meet the job market demands. More awareness raising would be important to encourage secondary students to study in diploma-level technical courses.

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<sup>12</sup> Detailed discussion in Chapter 6.

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# 4

## **QUALITY AND RELEVANCE IN TERTIARY EDUCATION**

## 4.1. BACKGROUND

**37. There has been a growing concern over the quality and relevance crisis of tertiary education and poor employability of graduates in Bangladesh.** Quality concerns on tertiary education have intensified with the sector's dramatic expansion over the past two decades, further exacerbated by inadequate resource allocation and limited capacity for quality assurance to guide this growth. As discussed in the preceding chapter, the tertiary education sector in Bangladesh experienced unprecedented expansion in terms of student enrollments with greater roles played by private education institutions. Much of this growth has occurred unsystematically amid weak enforcement of quality assurance mechanisms. For example, the National University has only a small inspection unit to conduct quality inspections in over 2,000 affiliated colleges spread across Bangladesh. The longstanding lack of quality assurance practice in public and private universities has led to ineffective monitoring of quality standards. It is only recently that a quality assurance and accreditation mechanism for higher education was introduced.

**38. Evidences show a growing and alarming disconnect between what students are studying and the skills demanded by the employers and job market.**<sup>13</sup> Unemployment remains high among new graduates, many of whom remain jobless up to two to three years of completing degrees in Bangladesh.<sup>14</sup> Paradoxically, employers have expressed strong concerns over the increasing difficulty in finding high-skilled candidates to fill their vacant positions. Modernization of economic structure and technological advances in industries have been increasing the demand for highly skilled workers.<sup>15</sup> A skills survey, however, reports that over two-thirds of employers reported lack of skilled applicants for professional, technical, and managerial positions across different occupations (Murshid 2016, as cited in Rahman, Haque, and Taposh 2016). In the absence of adequate high-skilled professionals in local job market, some sectors such as the RMG industry fill the skills gap through recruitment of foreign expertise.

**39. Comprehensive analysis and documentation of the challenges to quality tertiary education in Bangladesh has been scarce.** The following section investigates into some of the quality challenges across the TEIs in Bangladesh based on available data, reports, and scholarly works as well as experience and lessons learned from the World Bank-supported projects in tertiary education in Bangladesh. It also attempts to highlight some of the good practices of TEIs in Bangladesh for delivering quality education.

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<sup>13</sup> Some include EIU 2013 and 2014; World Bank 2013 and 2017.

<sup>14</sup> Forthcoming tracer study conducted by the World Bank finds that current unemployment among tertiary colleges is around 71 percent following three years of graduation. Another tracer study finds that around 25 percent of graduates were unemployed following two years of diploma graduation.

<sup>15</sup> See World Bankb. 2018. *Skills for Tomorrow's Jobs*.

## 4.2. KEY ISSUES IN QUALITY AND RELEVANCE IN TEIS IN BANGLADESH

### 4.2.1. Teaching and learning and assessment systems are traditional and rigid

**40. Pedagogical methods used in TEIs largely follow the traditional mode of didactic teaching.** Students are taught mainly through set texts, dictation of notes, and written assessments in tertiary education in Bangladesh (EIU 2014; World Bank 2014). The traditional teaching method often promotes rote learning, non-creativity, and passivity of students who reproduce what was dictated to them with no effort to go beyond what is taught in the classroom (EIU 2014). Without active participation, students' ability to develop higher-order critical thinking and problem-solving skills is likely to be impeded.

**41. Rigid updating of curriculum and lack of practical learning in academic programs are another challenge to improving teaching and learning in tertiary education programs.** Many public tertiary education programs do not periodically update curricula, which may lack new concepts and ideas in the field and undermine relevance and functionality of the degree (EIU 2014). For tertiary colleges and polytechnics, curricula are developed centrally by the National University and Bangladesh Technical Education Board (BTEB), respectively, with inadequate involvement of the institutions or industry. This gives little flexibility to institutions to quickly adapt curriculum to local industry needs. Furthermore, except for some university and polytechnic programs,<sup>16</sup> most tertiary education academic programs do not provide students with the opportunities to gain practical exposure to their fields through internships, industry projects, or research work. As a result, students often complete degrees with limited knowledge and experience of practical applications of their theoretical learnings.

**42. Student assessments in tertiary education heavily relies on written examinations. Public and private universities conduct their assessments at the department level by the teachers.** The major part of assessment generally involves written exam while a viva voce and practical laboratory test (for science disciplines)

may take a smaller share of the marking allotment. Tertiary college students are least exposed to diversified assessment methods as the colleges rely almost entirely on written examinations and opportunities to evaluate students' practical learning is largely missing.<sup>17</sup> Furthermore, as public university teachers are engaged in setting questions for colleges but are often unaware of the college curriculum, the effectiveness of the examination contents is also a concern. No systematic review of the National University examination is carried out regularly. In general, TEIs provide little feedback to students other than the conventional grades on tests, which makes it difficult for the assessment process to provide students scope for improvement. Nonetheless, private universities and some disciplines of public universities are now increasing the share of marks for practical assessments through presentations and research work and internships, in evaluating student performance.

**43. Teaching at tertiary colleges is overshadowed by the responsibility of undertaking numerous examinations.** The National University's centralized examination system creates challenges in ensuring adequate teaching hours at colleges. The holding of examinations by the National University is a huge undertaking involving over 300 days in a year. The process is prolonged due to the sheer number of subjects, courses, and examinees and by a lack of examination space at the colleges.<sup>18</sup> As examinations are held continually year-round, constantly taking up teachers' time and classrooms, teaching hours are often sacrificed, which inevitably lowers the quality of teaching and learning.

**44. Session jams and disrupted academic schedule are taking tolls on the efficiency of tertiary education and hampers transition to jobs.** Public universities and colleges often are unable to follow the academic calendar which hampers students from timely graduation. A study on the public university examination system finds that several institutions were unable to adhere to the academic calendar and this delays the commencement of classes for new students and holding

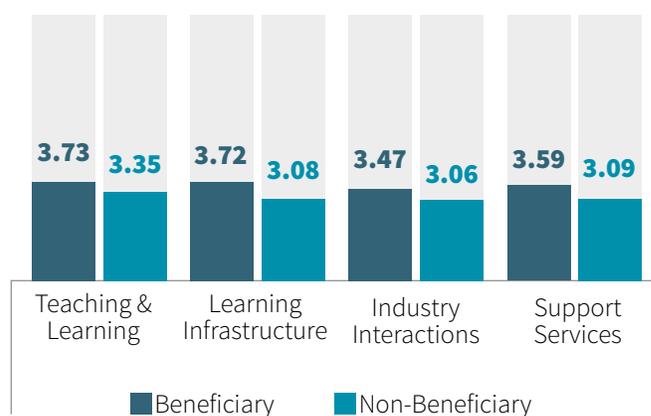
<sup>16</sup> The curriculum of polytechnics has a total of 45 days of mandatory 'Industry Attachment' program, in which students undergo apprenticeship experience in partnering companies in their localities. However well intended, this program is often criticized for poor quality and lack of supervision.

<sup>17</sup> Students in science disciplines participate in practical lab examinations—however, anecdotal evidence suggests that these practical assessments often are not conducted appropriately due to lack of lab facilities, raw materials, and lab instructors at the colleges.

<sup>18</sup> The National University has the task of holding 97 exams in 382 subjects and 1,952 courses in a single year for around 2 million students.

of final examinations (UGC 2015). These delays are often the result of ad hoc student or teacher protests, political unrest, and lengthy and extensive paper-based bureaucratic administrative processes involving different entities of the institution (UGC 2014). This leads to time lags or ‘session jams’ in public universities. Another study shows that sessions jams occur on average up to 20 months in general universities, 17 months in engineering universities, and 16 months in science and technology universities (Sarkar and Hossain 2016). Similarly, tertiary colleges suffer from session jams of up to 24 months.<sup>19</sup> These time lags in the public higher education institutions have considerable financial and practical implications for all stakeholders, including graduates having to delay entering the job market and lose earning opportunities (Sarkar and Hossain 2016).

**45. Some progress has been made to support active learning in tertiary education in Bangladesh.** Research shows that active learning improves student focus and attention, develops higher-order critical thinking, and supports better learning outcomes.<sup>20</sup> However, teachers’ competence and resourcefulness would have to be addressed to support active learning in classrooms. Most TEIs in Bangladesh are at a disadvantage in offering active learning arising from inadequate availability of modern technological media and teachers’ training on the use of these facilities in pedagogy (Chowdhury 2016; Mazumder 2014). Nonetheless, several universities in Bangladesh are gradually moving toward student-centered active learning. For example, the Government’s higher education project supported around 130 subprojects across different public and private universities to upgrade teaching learning facilities and curricula geared at more active student learning experiences. Student satisfaction surveys showed that university students participating in classroom learning involving technological media, work-based seminars, and workshops were more satisfied with the teaching-learning environment than those with less access to such resources in Bangladesh (Figure 12).



**Figure 12:** Satisfaction Rating among Beneficiary and Non-Beneficiary Students (out of 4-point scale)

Source: World Bank 2017

#### 4.2.2. Students’ readiness for higher education is weak

**46. Student readiness for university education is an often overlooked but growing concern in the university community in Bangladesh and could derail the effort for quality higher education.** Concerns on the quality of incoming students to TEIs have been voiced by the higher education community in Bangladesh over time. For example, while the pass rates in the HSC exam have been on the rise, most of the candidates fail to obtain the pass mark in entrance exams in top public universities in Bangladesh.<sup>21</sup> Due to weak foundational skills, especially in English and mathematics, universities often find that first-year students struggle to comprehend lectures.<sup>22</sup> According to the national student learning assessment at secondary education level, only around 48 percent and 41 percent of Grade 8 students meet the grade equivalent competency standard in English and math subjects, respectively.<sup>23</sup> Some private universities provide remedial noncredit courses in English, mathematics, and IT skills in the first year of study for students who need extra support in preparing them for the rigorous undergraduate

<sup>19</sup> In 2012, students of the National University scheduled for Honors final exam in 2009 attended the exams in 2011. Further delays in results publications create an indecisive situation where students can neither enroll in master’s program or apply for jobs. <http://www.thedailystar.net/news-detail-232579>.

<sup>20</sup> Some literature on the benefits of active learning include Fisher (2010); Freeman et al. (2014); Sivan et al. (2010).

<sup>21</sup> In 2016, around 90 percent of applicants failed to secure the pass score in the Dhaka University entrance exams. <http://www.theindependentbd.com/post/65605>.

<sup>22</sup> Studies find that as Bangla is the main language of instruction up to higher secondary education for most students, their proficiency in English is often not fully developed. As a result, students’ comprehension of lectures and materials weakens when the mode of instruction becomes English at the universities (Abedin, Majhlish, and Akhter 2009; ADB 2014).

<sup>23</sup> LASI 2013.

program (Box 2). However, such programs to support underprepared students are largely missing from public TEIs, where resources to introduce remediation efforts are unavailable.

## BOX 2

### Good Practices in Improving Student Readiness for Higher Education

The Asian University for Women conducts the Access Academy program to bring students from diverse backgrounds onto a common learning platform and improve learning gains in university. The curriculum focuses on raising students' English, quantitative reasoning, and general academic skills to levels that will enable them to succeed in the university's rigorous undergraduate program.

Private universities including North South University, East West University, and BRAC University also offer remedial noncredit courses in English and mathematics which are compulsory for students with deficiencies in these skills.

#### 4.2.3. Teaching and learning facilities and equipment are inadequate and outdated

**47. The quality of learning environment suffers from large classes, specifically in government universities, colleges, and polytechnics.** Teachers in universities, colleges, and polytechnics face large classes, which may make it challenging to deliver lectures with due attention. Student-teacher ratios are generally high in all types of TEIs, especially among public institutions (Table 5). Some departments have larger numbers of students enrolled in classes. Anecdotal evidence shows that in public universities, some departments have over 150 students per class. Without proper classroom facilities, such as speakers and multimedia, the delivery of lecture is often hindered, making teaching and learning less effective.

**Table 5:** Average Teacher-Student Ratio across the TEIs

	Public	Private	Total
University	1:40	1:27	1:33
College	1:77	1:12	1:24
Polytechnic	1:61	1:26	1:35

Source: BANBEIS 2015.

#### 48. Quality teaching-learning becomes challenging with inadequate provision of modern learning facilities in the TEIs.

Most TEIs have limited development funds to improve teaching-learning facilities. This compels them to operate without adequate teaching aids, modern labs, equipment, and information technology (IT) facilities needed for conducive teaching-learning environment (World Bank 2014). Especially in the provision of STEM, practical learning is hampered when students have little or no access to raw materials and lab facilities. Employers specifically have expressed discontent with available training facilities at technical institutions—the lack of quality facilities are considered to hinder technical graduates' competency and familiarity of machineries and tools needed for industry jobs (World Bank 2006).

#### 49. Universities have made good progress in provision of access to computers and Internet for students and teachers.

The government has made significant investments to establish a dedicated high-connectivity network in the university sector through the establishment of the Bangladesh Research and Education Network (BdREN). Till date, around 38 institutions have been connected to BdREN and are using the connection to support collaborative research works and virtual teaching learning with universities and institutions within and outside of Bangladesh. Additionally, 15 universities have set up campus networks (another 19 in process) utilizing the BdREN connection. The establishment of the campus networks would facilitate university-wide Internet connection for all students and teachers, significantly improving the quality of digital connectivity across these institutions.

#### 50. However, the quality of Internet connectivity and adequacy of computer facilities remain a challenge for many TEIs.

Most universities outside the BdREN connectivity continue to rely often on low bandwidth

# BOX 3

## Quality Teaching Learning Facilities to Support STEM in Tertiary Education in Bangladesh

The Government has supported two projects—the Higher Education Quality Enhancement Project (HEQEP) and the Skills and Training Enhancement Project—to overhaul the quality of teaching and learning in the university and the TVET sector, respectively. Established in 2009, the HEQEP has supported over 300 subprojects through three rounds of academic innovation funds (AIFs) across public and private universities in upgrading teaching-learning facilities. These subprojects involved 455 subject curriculum upgradations, 310 laboratories established or revamped with scientific instruments, 1,119 classroom modernizations with multimedia devices, 5,800 computers/laptops purchases, and around 29,000 books acquisitions among other quality enhancing facilities. These investments have significantly supported STEM learning as the beneficiary universities could support around 318 postgraduate and PhD students for scientific research projects and publish around 250 scientific studies in peer-reviewed national and international journals. On the other hand, STEP provided institutional development grants to 33 public and private polytechnics to upgrade classroom and labs with multimedia technologies, machineries and tools, and software essential to carry out practical learning in the science and engineering fields. Another 23 polytechnics are expected to receive grants for improving their teaching and learning facilities and supporting STEM education.

Internet through limited broadband or wifi connections. Low availability of computers further deteriorates access to Internet, especially in the public universities. A survey shows more than two-thirds of department heads from public universities felt the availability of computers to be insufficient while another 60 percent reported that Internet access was available for only teachers and administrators at the department level (UDL 2016). Even most of the private universities<sup>24</sup> struggle to provide adequate Internet-enabled computer access to students. On average, only 383 computers are available in the 85 private universities. The availability of computers and access to Internet for students’ learning are further

reduced (on average, 1 Internet-connected computer for 49 students) as almost 24 percent of private university computers are not connected to the Internet while another 60 percent are used only for management and administrative purposes.

**51. Tertiary colleges and polytechnics are less likely to have access to computers and Internet connection;** masters colleges are in a relatively better condition. Government development efforts have supported most tertiary colleges to gain Internet connectivity—the latest statistics shows that around 98 percent of all tertiary colleges are connected to the Internet (Table 6). However, the scarcity of computers for students’ use remains a

**Table 6:** Computer and Internet Access across Tertiary Colleges

College Type	No. of Colleges	No. of Computers	Per College Computer Availability	% of Colleges connected to Internet
Degree pass	1,178	7,804	6.6	97
Degree honors	445	4,561	10.2	99
Masters	136	4,539	33.4	99
Total	1,759	16,904	9.6	98

Source: BANBEIS 2015.

<sup>24</sup> Except for a few established private universities, most are new and have limited facilities, including computers.

huge challenge as on average only nine computers are available per college. This shows that most students and institutions, especially those in degree pass colleges, complete their programs without the opportunity for IT skills development (World Bank 2014). Among the polytechnics, around 56 have established computer labs and multimedia facilities through the government program. However, around 80 percent of polytechnics were out of this government program and still have inadequate computer facilities in most cases.

**52. Universities provide good access to learning resources such as books and journals through physical and digital library facilities, while tertiary colleges and polytechnics lag far behind.** Currently, 72 public and private universities are members of the UGC digital library that has enabled increased access to online journals and books. The monthly average download of e-journals steadily increased over the past five years showing a good demand for online resources. However, access to online resources could be better improved through providing e-resource use orientation, increasing subscriptions to high demand-based resources and increasing membership to different TEIs. Tertiary colleges and polytechnic institutions still remain outside of any digital library services. A survey shows that on average, colleges have less than 20,000 books and less than 25 journals in their collection (World Bank 2014). As government colleges receive some steady fund allocation for books and journals, they have double the average number of books available in nongovernment colleges, which operate with a minimum book collection (World Bank 2014).<sup>25</sup>

#### **4.2.4. Digital literacy among teachers and students are low**

**53. Teachers' ICT skills are poor and there is low willingness to use technology in the classroom, especially in colleges and polytechnics.** Mere access to technology does not ensure that students learn ICT skills. A case study on a rural tertiary college finds that students did not develop basic IT skills despite the availability of

computers and Internet (World Bank 2014). The study notes that college teachers did not have the necessary IT skills and digital literacy needed to use Internet-enabled computers at the institution. This challenge is more prominent in the college and polytechnic sectors, where classroom learning is largely traditional and modern ICT facilities are generally low, reducing teachers' need to learn and use such tools in pedagogy.<sup>26</sup> On the other hand, most universities recruit high-skilled teachers with good ICT skills which allow them to develop and continue using facilities in the classroom when made available.<sup>27</sup> However, low digital literacy continues to be a challenge among university students arising mostly from a lack of exposure to IT-based learning during secondary schooling. A pilot introducing a Learning Management System (LMS) for non-engineering students at a private university in Bangladesh showed that less than 10 percent of students accessed the system for additional learning materials (Khalid 2009). To improve e-readiness of incoming students, several universities, mostly private universities, include basic IT skills training for new students as a compulsory module of the program to develop digital literacy skills. Significant scope remains to improve ICT use in learning at the TEIs, especially for the tertiary colleges and polytechnics, where most institutions lack modern ICT facilities.

**54. Nonetheless, the uptake of ICT use in tertiary education is gradually improving.** Multimedia classrooms support teachers and students to visualize difficult concepts enriching the learning experience. In Bangladesh, established private universities and several public universities are increasingly moving to multimedia classroom learning, delivering lectures through presentations, videos, and online content and maintaining class communication through email and web-based platforms (HEQEP 2017). Virtual classrooms have been established in 34 universities where online classes are conducted connecting students and teachers across Bangladesh as well as with foreign institutions (Box 4).

<sup>25</sup> National University regulations stipulate that a minimum of 3,000 books needs to be held in colleges which run Honors programs with 2,000 as minimum in Degree level colleges.

<sup>26</sup> The same challenge of ICT skills and digital literacy among teachers is noted across other schooling levels in Bangladesh as well as other parts of the world (British Council 2015; PISA 2015).

<sup>27</sup> For example, BRAC University conducts basic IT learning during library orientation for teachers to make them familiar with accessing online resources.

# BOX 4

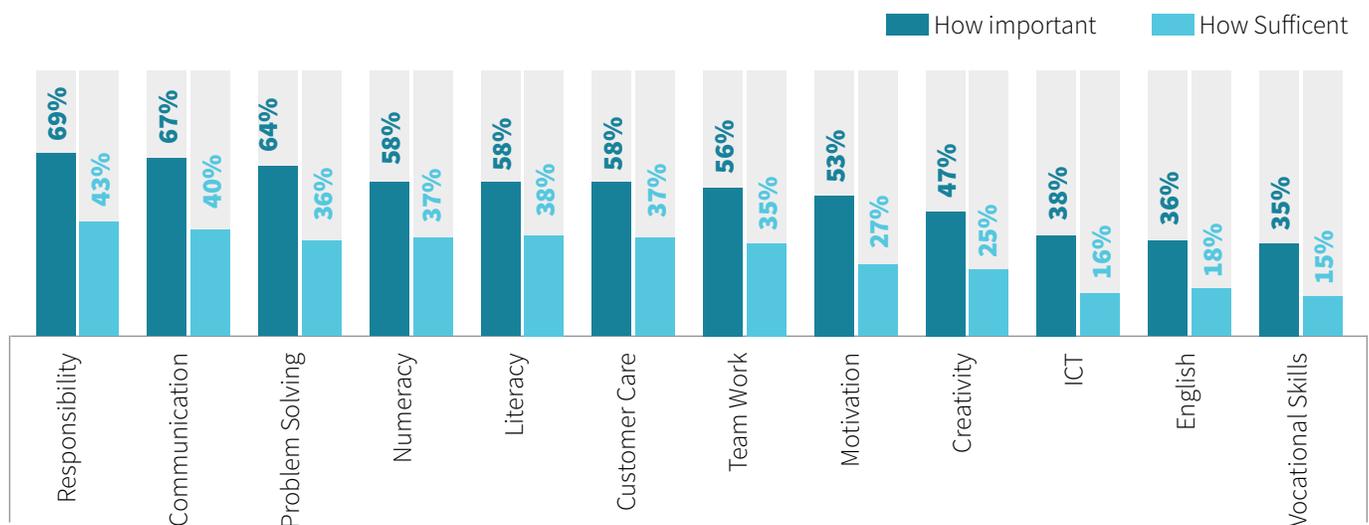
## Virtual Classroom Teaching in Bangladeshi University

Under AIF support, the Department of Pharmacology of Bangladesh Sheikh Mujibur Medical University (BSSMU) established the first-ever virtual classroom system for medical college students in Bangladesh. The subproject piloted innovative use of information technology in medical education by establishing a virtual classroom environment. Under the pilot, medical college institutions across Bangladesh are connected to the virtual classroom allowing senior medical professors in Dhaka and even international experts from abroad to deliver their lectures to students in medical colleges in different regions. Students can attend real-time online classes, download teaching materials, and assess their competence in self-administered tests.

### 4.2.5. Opportunities for training higher-order cognitive and soft skills are missing

**55. Employers are placing greater emphasis on the value of higher-order cognitive and soft skills among employees for effectiveness in work in Bangladesh.** Yet, most graduates enter the job market with inadequate development of these skills. An enterprise-based survey finds that employers ranked three soft skills (responsibility, communication, problem solving) followed by two cognitive skills (numeracy and

literacy) as important work-related skills for success among professionals. However, more than one-third of all employers reported inadequacy of these important skills among professional workers (Figure 13). This indicates that professionals are entering jobs with limited exposure to cognitive and soft skills development. The low availability of these traits among employees creates high demand for these skills as studies find employers compensating higher-order cognitive skills and soft skills with higher pay (Nomura and Adhikari 2017; World Bank 2013b).



**Figure 13:** Employers' Perception of Skills Importance and Skills Sufficiency among Professional Workers in Bangladesh (Share of respondents, percentage)

Source: World Bank 2014.

**56. A few higher education institutions and centers in Bangladesh are experimenting with courses that explicitly incorporate higher-order cognitive and soft skills development among students.** Several private universities in Bangladesh have developed learning modules or established training centers within the institutions focused on enhancing cognitive and soft skills of students (Table 7). These efforts are aimed to improve graduate employability, which remains a critical aspect for attracting student enrollment in the private universities. On the other hand, there are very few examples of activities undertaken to improve nontechnical skills of graduates in public TEIs. Public TEIs have limited funds, resources, and flexibility compared to private counterparts for conducting additional skills development training for students.

**4.2.6. Teachers are in short supply and lack professional development opportunities**

**57. There is an acute shortage of regular teachers, especially in tertiary colleges and polytechnics.** Most government colleges, especially those outside the capital, have high numbers of vacant teachers' positions that reduce the capacity at these institutions to deliver high quality programs (World Bank 2015). Government polytechnics also suffer from regular teacher shortages and are currently running on contractual teacher supported under a government development project. Both government college and polytechnic teachers are recruited centrally by the MoE through the public service system. The long bureaucratic process results in lags of up to two years, and turnovers during this time further increase vacancies. Even private TEIs face teacher shortages often cited because of lack of qualified

**Table 7:** Good Practices of Higher-Order Cognitive Skills and Soft Skills Training in Bangladesh

Programs and Institution	
<p><b>Residential Semester Program</b></p> <p><b>Professional Skills Development Program</b></p> <p><b>BRAC University</b></p>	<p><b>Residential Semester</b> aims to develop a range of soft skills and personality qualities among undergraduate students. The residential semester focuses on four areas of development: (a) improving <b>communication skills</b>, (b) creating strong sense of <b>responsibility</b>, (c) developing firm principles to guide students in <b>decision making and action</b>, and (d) providing <b>holistic education</b> through academic and extracurricular activities.</p> <p><b>Professional Skills Development Program</b> is a 13-week modular course designed to improve BRAC University students' employability, in response to employers' increasingly diverse and sophisticated needs. It focuses on enhancing the <b>all-round development</b> of students, by building a variety of skills sets that increase their appeal to employers and improve their <b>'on the job' performance</b>.</p>
<p><b>Center for Cognitive Skills Enhancement</b></p> <p><b>Independent University Bangladesh</b></p>	<p><b>Center for Cognitive Skills Enhancement</b> aims to build higher-order cognitive skills through engaging undergraduate students in <b>logic, rationalization, problem solving, and decision making</b> experiences using digital tools like <b>games and apps</b> as well as active learning experience such as <b>research activities</b>.</p>
<p><b>Leadership Program</b></p> <p><b>Bangladesh Youth Leadership Center</b></p>	<p>Bangladesh Youth Leadership Center's training programs provide face-to-face and online training courses focusing on the development of higher-order cognitive skills, including <b>leadership, problem-solving, and critical thinking, communications skills and pre-employment/professional development training</b> for undergraduates, graduates, and professionals.</p>
<p><b>Bdjobs.com</b></p>	<p>The online job search platform provides a range of training workshops and certificate programs to support technical and soft skills development of job seekers and professionals.</p>

candidates along with limited staffing funds (World Bank 2014). As a result, most private universities recruit part-time teachers to run regular programs. With almost one-third of private university teachers working as temporary faculty, the quality of learning suffers as teachers do not receive the professional development opportunities or are not involved in the long-term development objectives of the institution.<sup>28</sup>

**58. Teachers' recruitment qualification and incentive system is not conducive to attract and retain top talent.**

The UGC Teacher Recruitment Policy requires candidates for entry-level teaching posts to have a minimum of a master's degree in the teaching field. No prior research or teaching experience is sought that would otherwise indicate the knowledge and pedagogical skills of candidates. For higher teaching posts, the policy requires candidates to have a minimum post-master's degree along with teaching experience and publications. Qualifications needed for teaching in colleges and polytechnics are even less stringent. Lecturer posts are filled through the Public Service Commission recruitment system, which requires candidates to have at least a bachelor's degree. Promotions in public universities are not automatic but follow the procedure of fresh recruitment while considering some competency and performance indicators such as post-master's degree, years of experience, and number of publications. There is also a provision of internal promotion by which a candidate is automatically promoted to the higher post if he/she fulfils certain criteria. Private universities also tie internal promotion to higher teaching positions to indicators such as post-master's degree and research publications. On the other hand, the government college and polytechnic teachers' promotions basically depends on years of service completed, that is, seniority, with no consideration of performance-related criteria.

**59. Most TEI teachers fulfill the minimum criteria of holding a master's degree, but very few have more advanced qualifications or training in research and teaching.** Around one-third of the total public university teachers hold a PhD with most PhD-holding teachers (around 60 percent) working in five established

universities (UGC 2015). On the other hand, around one-fifth of all private university teachers had a PhD, the majority of whom (around 40 percent) belonged to five most prestigious private institutions (UGC 2015). In government colleges, most teachers have a master's degree but only a few—around 5 percent—have a PhD or advanced qualification in their discipline. The situation is worst in the polytechnics where a recent survey finds on average, only about a quarter of teachers has a master's degree, while around a third have only diploma degree (World Bank 2017). Very few TEI teachers have advanced research training which reduces their ability to fully engage and produce high quality research work often with reports of plagiarism incidences surfacing.<sup>29</sup>

**60. Professional development opportunities are scarce and only intermittently provided for a small number of teachers in tertiary education.** Universities and colleges around the world are increasingly investing in continuous professional development training to ensure quality and relevant learning throughout the faculty's service period. Except for a few cases, almost all TEIs in Bangladesh do not have any structured in-house teachers' orientation and training programs.<sup>30</sup> The MoE provides some basic training to government college and polytechnic teachers through the National Academy of Educational Management (NAEM). The NAEM offers nine courses to around 1,200 government principals and teachers of colleges and polytechnics each year on areas including, education administration and management, ICT, and research methodology (NAEM 2017). Other important training such as pedagogical and andragogic training occur on a limited scale on ad hoc basis, mostly through government development projects for college and polytechnic teachers.

**4.2.7. Accreditation and quality assurance mechanism are at a nascent stage**

**61. Quality assurance has made significant progress in the higher education sector.** At the national level, the Accreditation Council, Bangladesh (ACB) Act was enacted.<sup>31</sup> Under the Act, the Accreditation Council would be established as an independent autonomous

<sup>28</sup> As of 2015, around 33 percent of total 15,058 private university teachers are working as temporary faculty in 85 private universities.

<sup>29</sup> Daily Star report on DU teachers, <http://www.dhakatribune.com/bangladesh/education/2017/09/28/five-du-teachers-accused-plagiarism/>.

<sup>30</sup> The Independent University Bangladesh—private university—set up the Center for Pedagogy which offers pedagogy training to new and existing teachers of the university. Six public universities opened Center of Excellence in Teaching and Learning under a GoB-British Council project to offer professional development for teachers and senior administrators.

<sup>31</sup> The ACB Act became effective on March 21, 2017, with its publication in the Bangladesh Gazette.

body responsible for overseeing the quality of higher education at the institutions against the benchmark given in the National Qualifications Framework. The Council is also tasked with accreditation of programs at the initial stage and later of institutions and will conduct external assessments of the quality of teaching and learning in the higher education institutions. At the time of commissioning of this study, the Accreditation Council is yet to be operationalized causing delays in the implementation of quality assurance for higher education.

**62. Universities have initiated institutional-level quality assurance programs.** Around 69 public and private universities have established institutional quality assurance cells (IQAC) to monitor and report on the quality of teaching-learning across different programs. In each university, the IQAC provide technical support and coordinate across different faculties for undertaking self-assessments. The self-assessments involve surveys to collect student and teachers' feedback on the quality

and effectiveness of the program. Based on the self-assessment reports, the faculties subsequently develop improvement plans to address quality issues. The self-assessment and improvement plans are also externally peer-reviewed to ensure quality of the process. The self-assessment exercise offered university students, especially those from public institutions, the first-time opportunity to provide feedback on teaching and learning environment, which has been largely missing in the higher education sector (Quddus and Rashid 2000).<sup>32</sup>

**63. Other TEIs however are yet to conduct any institutional-level quality check of their programs.** In the college sector, the National University conducts 'inspections' to ensure affiliation requirements are met at the colleges. However, quality aspects of teaching and learning, especially student and teachers' feedback, are missing from these audits. The polytechnic subsector is yet to start any institutional quality assurance activities. Quality reviews of diploma programs are urgently needed.

### 4.3. POLICY OPTIONS FOR IMPROVING QUALITY AND RELEVANCE IN TEIS

**64. Implementing modern practices in teaching-learning and Assessment.** One means to overhaul the traditional teaching learning system is through promoting active learning in the classroom. Active learning would require equipping teachers with the necessary classroom resources and training in pedagogy to adopt the new approach. Greater emphasis on fostering practical and hands-on skills should be built into STEM education and training. Public TEIs, especially the National University, are required to review the examination practice and ensure assessments are geared toward measuring practical knowledge rather than rote learning and to incorporate a system of feedback for improving student competencies. Introduction of LMSs can support teachers and administrators track and evaluate student progress provided adequate training is offered using such systems. Moving forward, there is a need to design and implement learning modules aimed at developing higher-order cognitive and soft skills among graduates. These skills need to be recognized in National Qualification Frameworks, incorporated in curriculum and measured as part of learning gains in the TEIs.

**65. More investments in teaching and learning facilities and information technologies.** Provision of modern computer and science labs, technological media, books, and journals among other learning materials are essential inputs to quality learning. Required investments to upgrade teaching-learning facilities across TEIs is huge. Though the government has been the main investor in public TEIs, both public and private institutions need to tap into new resources of funding. Partnerships with the private sector, especially in research and development (R&D) work, is one means to acquire investments in labs and modern equipment in exchange for supporting development of technology. Such practice has been introduced under the AIF university-industry collaboration window and could be expanded as well as replicated to other TEIs in time. To attract private investments in education and collaboration, the government may consider special incentives (for example, tax rebate, recognition) for industry. Access to computers and high-quality Internet for TEI students is critical to develop IT skills for the modern workplace. Expansion of the BdREN connection and establishment of campus networks in

<sup>32</sup> Except for some private universities which included student evaluation of courses as part of regular quality review.

the remaining universities, colleges, and polytechnics are ways to ensure high-quality Internet coverage for students and teachers. Digital literacy training for teachers and students to support the use of technology for learning and ensure IT skills are developed.

#### **66. Improving readiness for tertiary education.**

Despite the quality of incoming students linked with basic education schooling, TEIs nonetheless need to take this issue head on to improve graduate learning and employability. Studies show that remedial courses for underprepared university students may be one means to improve student readiness and performance for higher education (Bettinger and Long 2009; Luoch 2014). While most private universities in Bangladesh are offering remediation, public TEIs have by contrast are yet to implement such programs. Public TEIs should also be provided the resources and scope to introduce similar remedial programs to raise the foundational skills and quality of incoming students. For example, blended learning modules where the teaching is delivered online and final assessment through sitting exam could be used for only remedial modules. This would also reduce the pressure on teachers and scarce resources which is often considered a barrier to introducing such programs in the public TEIs.

#### **67. Enhancing teacher competencies through professional development.**

Continuous professional development training for TEI teachers are critical inputs to quality learning. There is a need to develop teacher competency requirements across subject areas, considering both technical (subject expertise, curricula development, pedagogy, and so on) and non-technical aspects (management, leadership, socioemotional skills, and so on) and inform the development of structured in-service professional training programs. There is a need to review the government teacher recruitment

and promotion process for colleges and polytechnics to ensure teachers are attracted toward and motivated to take up the teaching profession. Other than monetary incentives, good teachers can be attracted through the provision of opportunities for growth and recognition, for example, more scholarships and research funds, teaching excellence awards, and performance-based incentives.

#### **68. Partnership with renowned foreign academic institutions.**

Forging partnership with renowned foreign universities through twinning or joint programs is an effective means to raise the quality of teaching and learning in Bangladeshi universities. Already some progress has been made through existing academic partnerships with renowned foreign TEIs for teachers' professional development in the TVET and tertiary college sector. Additionally, the Chittagong Veterinary and Animal Science University was able to initiate student exchange program with the U.S. universities following upgradation of teaching-learning facilities funded by the government's higher education project. More TEIs in Bangladesh should be supported in initiating academic partnerships that support knowledge transfer, exchange of experience, and capacity development. These partnerships could focus on faculty and student exchange, joint conferences, and management leadership training.

#### **69. Implementing the quality assurance mechanism in all TEIs.**

The MoE needs to take the necessary steps to implement the ACB Act and quality assurance system effectively across all universities and tertiary colleges. Institution-level quality assurance activities need to be strengthened and regularized at universities and colleges. Polytechnics remain outside the scope of the ACB Act. There is a need to initiate quality assurance activities, for example, self-assessments, in the polytechnics to motivate and create awareness in TVET stakeholders on the importance of quality assurance.

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5

**RESEARCH AND  
INNOVATION  
IN TERTIARY  
EDUCATION  
INSTITUTIONS**

# RESEARCH AND INNOVATION IN TERTIARY EDUCATION INSTITUTIONS

## 5.1. BACKGROUND

### **70. Research and innovation have been generating knowledge and solutions to tackle development challenges and spur economic growth and poverty reduction in Bangladesh.**

For example, R&D has been playing a crucial role especially in the development of agriculture sector in Bangladesh (Ahmed, 2014). Over the past two decades, research activities carried out by agricultural universities and research institutions are known to have played a critical role in finding and disseminating new technologies and innovative solutions that have increased rice yields in Bangladesh. These innovations have been instrumental in helping the country achieve food self-sufficiency against the backdrop of a surging population (Ahmed, 2014).

### **71. Public TEIs, along with specialized research institutes, are drivers of research and innovation in Bangladesh.**

In Bangladesh, the degree of involvement in research and innovation varies widely across the type of TEI. Universities are mandated for leading knowledge generation and innovation, for which most advanced researches have been mainly conducted in these institutions, particularly in public ones. For instance, Bangladesh University of Engineering and Technology (BUET) is the leading university in engineering researches, and Bangladesh Agricultural University (BAU) has been playing a central role in agricultural researches. Private universities also produce a small volume of research documents, but these are mostly essays and periodicals which generally have not undergone peer review (UGC 2014). On the other hand, the polytechnics and tertiary colleges are mandated as purely teaching institutions, remaining out of the research and innovation culture. However, these institutions exhibit potential for greater engagement in R&D, especially in the polytechnics where teachers and students are gradually engaging in innovative work.

**72. This section will examine the status of research and innovation** among the TEIs in Bangladesh and discuss the key challenges and strategies to the development of an effective research and innovation system in the subsector.

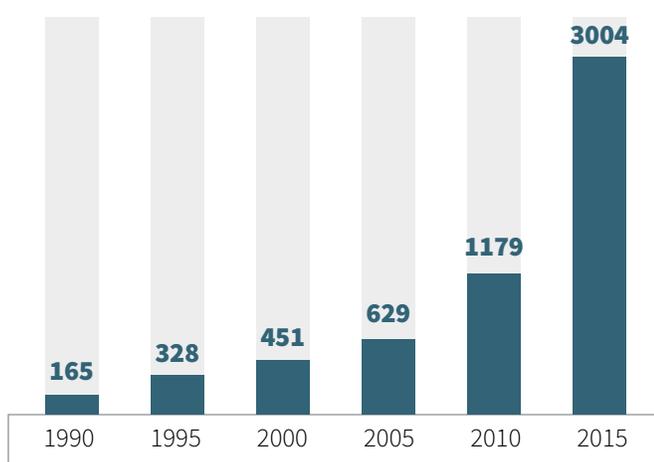
## 5.2. STATUS OF RESEARCH IN BANGLADESH

### **73. Bangladesh's research outputs, though still at a low level internationally, have increased dramatically over the past decade.**

The total number of research publications<sup>33</sup> produced each year increased remarkably from just 165 in 1995 to over 3,000 in 2015 (Figure 14). Despite the improvement, the size of research outputs per population remains quite small for Bangladesh, standing at only around 20 publications per million people in 2015. All other South Asian counterparts sustain much higher volumes of research output per population, for instance, India (79), Sri Lanka (62), Nepal (31), Bhutan (77), Maldives (61), and Pakistan (56). The H-index<sup>34</sup> for Bangladeshi research publications is also quite low compared to developed countries as well as

<sup>33</sup> Citable documents include articles, reviews, and conference papers.

<sup>34</sup> The H-index here is a country-level metric that attempts to measure both the productivity and citation impact of the publications of a country for the given year. The higher the H-index, the greater the strength/impact of the research produced.



**Figure 14:** Number of Citable Documents Published per Year by Bangladeshi Researchers, 1990–2015

Source: Web of Science, 2016.

neighboring ones, indicating that the strength of research produced by Bangladeshi academics is yet to be fully cultivated (Table 8).

**74. A large pool of Bangladeshi academics with PhDs, many trained abroad and mostly concentrated in the established public universities, indicates the presence of untapped research potentials in Bangladesh.**

University academics are the core group of professionals

**Table 8:** H-Index for Selected Countries, 2015

Countries	H-Index
United States of America	1,783
United Kingdom	1,099
Japan	797
China	563
India	426
Pakistan	166
Bangladesh	134
Sri Lanka	120
Nepal	94
Afghanistan	36
Bhutan	27
Maldives	21

Source: Scimago, 2016.

with advanced research capabilities in Bangladesh, and there is a large pool of university faculty who possess PhD qualifications in the tertiary education sector in Bangladesh. As of 2014, around 43 percent of the 12,047 public university teachers in Bangladesh held a PhD degree (UGC 2015). The majority of PhD holders are concentrated mostly in the established public universities, in particular, Dhaka University, Rajshahi University, BAU, BUET, Jahangirnagar University, and the Bangabandhu Sheikh Mujib Medical University. Put together, these 6 public universities alone (out of 33 public universities) account for a half of the total teaching staff and around two-thirds of the total academics with PhD degrees in the public university subsector. On the other hand, around 19 percent of the 14,219 teachers in the 80 private universities held a PhD, while the majority (around 35 percent) of the PhD holders belonged to five established private universities (UGC 2015).<sup>35</sup> By contrast, colleges have few human resources for research. The share of academics with a PhD is less than 5 percent in government tertiary colleges (World Bank 2014).

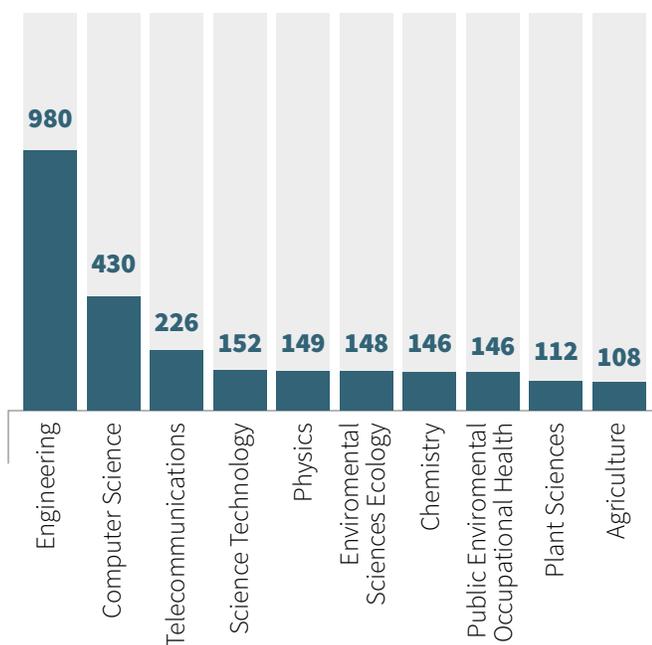
**75. Engineering and science are the leading research fields producing the major part of research publications and attracting the most research interest in Bangladesh.**

The highest number of citable documents in Bangladesh was available under engineering, accounting for almost one-third of the total citable research documents in 2015 (Figure 15). This is also common for other South Asian countries where similarly the volume of engineering research publications was the highest, such as India, Sri Lanka, and Pakistan, in 2015. Other research areas which produced a high number of publications are computer science (430), telecommunications (226), science technology (152), physics (149), and environmental sciences and ecology (148). Engineering and these science fields are probably the areas most demanded by today’s Bangladeshi economy and society. On the other hand, far fewer researches are being produced in areas of literature, psychiatry, women studies, orthopedics, and geography.

**76. Research output generation is still weak in the majority of universities.**

Many universities have minimal research outputs. As many as half of public and private universities reported to not have produced any publications in 2014. Even among public universities, more than 40 percent did not produce any research publications

<sup>35</sup> These five private universities are North South University (449), BRAC (177), East West University (118), South East University (111), and Stamford University (94).



**Figure 15:** Top 10 Research Areas by Volume of Citable Documents Produced in Bangladesh in 2015

Source: Web of Science, 2016.

in 2014 according to the UGC annual report (Table 9). The majority of these are newly established universities with low academic staffing and where research infrastructure is yet to be developed. Of those public universities with research outputs, the volume is still quite low with around 30 percent (10 universities) producing less than 20 publications per 100 faculties. Similar trend of low research

**Table 9:** Number of Research Publications by Type of University in Bangladesh 2013

Publications per 100 faculty members	No. of Universities	
	Public	Private
0	16	40
1 to 19	10	15
20 to 39	2	16
40 to 59	5	4
60 to 79	0	3
80 to 99	1	0
100+	1	2
<b>Total</b>	<b>35</b>	<b>80</b>

Source: UGC Annual Report, 2014.

engagement is also found across the private universities. Half of all private universities did not produce any research publications in 2014, while around 40 percent produced less than 40 publications per 100 faculty members, which comprised mostly of non-peer reviewed essays and periodicals (UGC 2014). The low volume of publications in many of the universities reconfirms that there is still a long way to go in building up the research capacity in the tertiary education sector.

**77. The TVET subsector shows good potential for R&D activities with signs of emerging local R&D capacity in the sector.**

R&D work with industry, though not mandated, is nonetheless important for polytechnics for developing graduates who are familiar with the industry environment and latest technology through practical learning. Compared to universities, the polytechnic institutions are quite behind in terms of labs and facilities, public funding, teaching and research capacity and suffer from reputational issues associated with low quality of teaching and learning. This can make them less preferable by industry for R&D work compared to universities, as noted by international experience (Beise and Stahl 1999). However, recent development efforts by the government are gradually diffusing innovation into the polytechnic system and results are being observed. For example, the government's STEP has been working to promote R&D in the polytechnics through efforts such as institution-industry partnerships and upgrading laboratories for local research works. Several local innovations have emerged from these efforts including technology to reduce carbon pollution from brick fields, machine to alert boats operating at over-capacity, and a central nebulizer and suction machine that supports multiple patients instead of a single patient, among others (STEP 2018). A global case study of a leading global polytechnic (Box 5) indicates that for Bangladeshi polytechnics to strengthen industry-linked R&D activities, greater investments in facilities, and capacity building are warranted.

**78. The commercialization of research outputs is still at a nascent stage, picking up some highly successful cases.**<sup>36</sup>

One measurement of the extent of transforming research results into applied products and services is the volume of patenting filed by researchers. Worldwide, universities and research institutes are increasingly keen on protecting their intellectual

<sup>36</sup> Several innovations in biological and agricultural sciences that emerged from research funded under the HEQEP have applied for patents in Bangladesh. These include improved methods for foot and mouth disease diagnosis and prevention technology, mycoplasma and salmonella antibody detection method, soil testing kits, development of herbal product in the use of fish disease recovery, and alternative sugar supplements, among others.

rights and revenue generation on their inventions that will help raise additional funds for future researches. Bangladesh is also slowly catching up with this trend. In 2013, Bangladesh filed 84 patents, which is an overall 20 percent increase compared to that in 2000, reflecting gradual improvements in R&D and innovation over the past decade (WIPO 2016). However, the scale at which innovation and patenting is occurring in Bangladesh is still limited compared to other countries (Table 10). For example, Bangladesh ranked 137 out of 160 economies, producing less than 1 patent per million of the population, much lower than India (17), Sri Lanka (22), Malaysia (77), and Singapore (21). Bangladesh still has a long way to go in promoting high-quality researches with greater emphasis on generating IP to boost quality researches and spur future start-ups and new business solutions.

**Table 10:** Ranking of Patent Filing for Various Countries, 2013

Countries	World Rank (out of 160 countries)	Patents per Million Inhabitants
Japan	6	3,716
Singapore	21	1,014
Hong Kong SAR, China	37	243
Malaysia	57	77
Sri Lanka	85	22
India	92	17
Vietnam	108	5.5
Indonesia	114	3.0
Pakistan	125	1.1
Bangladesh	137	0.5

Source: World Intellectual Property Organization (WIPO) statistics, 2016.

## BOX 5

### Case Study - Nanyang Polytechnic in Singapore

The Nanyang Polytechnic in Singapore is one of the leading examples of excellence in R&D and innovation in technical education. The Centre for Innovation, Research, and Impact under the polytechnic serves as a one-stop technology transfer service center for all research, innovation, and enterprise-related activities, bringing together staff, students, and industry partners in translating impactful ideas to the market. The Centre focuses on innovation and enterprise-related training and development for staff and student through support for acquiring R&D grants, managing intellectual property (IP) rights, and commercialization of innovation, and enhancing applied R&D work with industry for keeping teachers and students relevant to market needs. The availability of modern labs and equipment along with continuous capacity building and strengthening of industry partnerships have supported Nanyang Polytechnic in developing a range of innovations in life sciences, IT and computer, engineering, and nanotechnology.

## 5.3. KEY ISSUES IN RESEARCH AND INNOVATION IN TEIS IN BANGLADESH

### 5.3.1. Resource allocation for research is inadequate

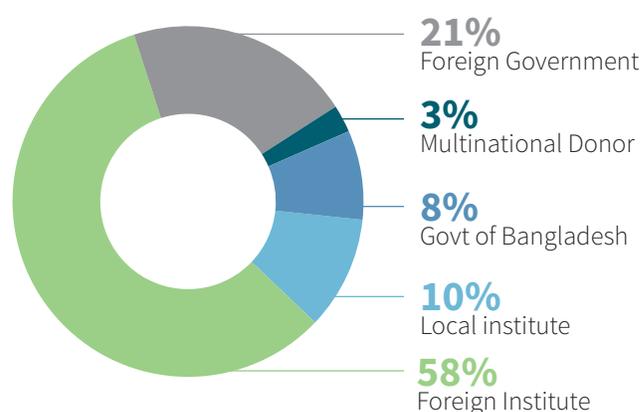
**79. Researches at universities have been grossly underfunded by the government for many years.** Public spending has historically been low for tertiary education (see Chapter 6) and negligible for research funding. The grant

allocation for research has increased over the past years from BDT 36 million (US\$0.45 million) in 2009/10 to BDT 87.5 million (US\$1.09 million) in 2015/16 (Table 11). In terms of per university average, the allocation was a mere BDT 2.4 million (US\$30,000) in 2015/16—an insignificant amount of money for any research project. The share of government grants to public universities that goes to research also remained

severely low at well below 1 percent despite an increase in the number of institutions over this period.<sup>37</sup> Compared to Bangladesh, the average share of research allocations in public funding to universities in other South Asian countries, including Sri Lanka and Pakistan, is slightly higher at 2 percent (MoF 2016; Thornton 2016). The UGC has a key role to play in distributing government funding to support research and the publication of research in the public universities. In 2015–2016, the UGC slated 13 percent of its budget (US\$0.34 million) to support faculty development in research across different disciplines of public universities. However, the share of UGC budget to support research in the public universities has been declining over the past years. Other than these two sources, the MoE has a small allocation in its own budget to support research work in the different institutions under its purview, including the public universities. In 2014, the MoE directly allocated around US\$656,000 for research.<sup>38</sup>

**80. Against the backdrop of low public spending on research, most researches in Bangladesh have been financed by research funding from foreign institutes and governments.**

Foreign governments and institutes are a major source of research funds in Bangladesh. In 2015, foreign institutes<sup>39</sup> funded more than half of all research publications in Bangladesh, while foreign



**Figure 16:** Share of Funding Sources for Researches Published by Bangladeshi Researchers, 2015

Source: Web of Science, 2016.

governments funded around 20 percent (Figure 16). On the other hand, less than 20 percent of all research published by Bangladeshi researchers were funded by the Bangladesh government or Bangladeshi institutions. With foreign entities as the main source of funding, the major share of publications (around 60 percent) authored by Bangladeshi researchers were produced through international collaboration in 2015 (Scimago 2016).

**5.3.2. Physical and human resources for research are limited**

**81. There is a considerable need to increase in-country PhD enrollments to boost the research capacity in the HEIs.** Public universities are the only approved institutions by the UGC to offer PhD programs in Bangladesh. As of 2013, around 7,092 students were enrolled in PhD programs across the 33 public universities.<sup>40</sup> In terms of total graduate enrollments per million of population, Bangladesh fares well compared to most South Asian countries (Afghanistan, Bhutan, Sri Lanka, and Pakistan) but remains behind others (India, Nepal). Developed countries such as Japan, the United Kingdom, and the United States of America tend to have in-country PhD enrollments as a share of tertiary enrollments above 2.0 percent, whereas Bangladesh’s share is around 0.3 percent. This would indicate a need to improve access to in-country postgraduate programs, especially PhDs, in improving the research capacity.

**Table 11:** MoE Budget to Public University and Allocation to Research in Bangladesh (BDT, millions)

Fiscal Year	Total Grant to Public Universities	Allocation to Research	% of Research Allocation
2009–10	8,514.8	36.0	0.4
2010–11	10,912.2	46.0	0.4
2011–12	11,790.3	57.0	0.5
2012–13	12,336.0	56.0	0.5
2013–14	15,425.0	63.5	0.4
2014–15	17,426.0	86.5	0.5
2015–16	18,860.0	87.5	0.5

Source: UGC Annual Report 2016.

Note: Total grant allocation includes both revenue and development; research allocation includes allocation as part of grant to universities and allocation through UGC budget; US\$1 = BDT 80 (as of June 2018).

<sup>37</sup> The MoE provides a consolidated budget to all the public universities through the UGC according to each university’s requisition. The UGC allocates and distributes the budget amounts to each university individually.

<sup>38</sup> The MoE provides this fund based on research proposals received from the different institutions.

<sup>39</sup> Foreign institutes include public and private universities, research institutes, think-thanks, NGOs, and nonprofits belonging to countries other than Bangladesh.

<sup>40</sup> There is a tendency/preference for Bangladeshi academics to undertake PhD programs in foreign countries, which may contribute to lower in-country enrollments.

## **82. Underdeveloped research facilities in the TEIs are posing substantial challenges for academics.**

Inadequate investment in contemporary research infrastructure remains a common issue in the TEIs. The absence of modern scientific labs, equipment, and availability of raw materials makes it challenging for academics to carry out and produce high-quality research (World Bank 2014). Some of the faculty members of public and private universities were fortunate enough to upgrade labs and acquire equipment through the competitive AIF provided by the government under the HEQEP. According to a recent satisfaction survey, the level of satisfaction among university teachers on the ability to conduct research increased by around 42 percent due to the facilities availed under the AIF (HEQEP 2016a). However, a large share of faculties are yet to receive the grant, including those in young universities established in recent years.

## **83. Internet connectivity and access to journals and publications also remain underdeveloped or entirely missing across the different TEIs in Bangladesh.**

The university sector is gradually progressing to improve digital connectivity, especially due to major development work carried out by the government through its higher education operation over the past few years. Around one-third of all universities in Bangladesh are now connected to a dedicated high-speed Internet connectivity network, known as the BdREN, for online teaching and learning, academic collaboration, and knowledge sharing. Access to e-resources, such as journals, books, and databases are subscribed through the UGC Digital Library by 72 public and private universities since 2012 (Box 6). Despite the progress, utilization of these digital library services is yet to pick up among university users (HEQEP 2016b). This is likely due to a lack of technical know-how and awareness on e-resource use among potential users against the backdrop of a low-productivity research environment at the universities (UGC 2015). On the other hand, the polytechnics subsector is yet to avail services such as dedicated high-speed Internet connection or digital library resources, mainly as these institutions have remained out of mainstream R&D work. In the tertiary college subsector, efforts are under way to improve connectivity and access to e-resources through the Government's ongoing development operation in the sector.

### **5.3.3. Industry-institution partnerships for research and teaching are scarce**

## **84. There are strong needs to strengthen industry collaboration and private sector participation in**

# BOX 6

## **UGC Digital Library**

The UDL was established in 2012 under the government's HEQEP with the aim to promote research and innovation in Bangladesh through access to scholarly e-resources to all member institutions at subsidized subscriptions. As of 2017, UDL is providing access to around 35,000 e-resources to 72 member universities (33 public, 38 private, 1 international).

## **promoting R&D work and supporting commercialization of research output.**

Bangladesh ranks poorly and remains at the bottom tier (131 out of 140 countries) for university-industry collaboration in R&D, behind other South Asian counterparts such as India (50) and Sri Lanka (109). Studies show that industry-institution collaboration in the universities is generally low due to (a) inadequate laboratories and infrastructure to conduct industry research; (b) absence of mechanisms to facilitate collaboration between industry and institution; (c) low commercialization potential of university research; (d) low knowledge among academics on commercialization of research; and (e) a lack of awareness among industry on university expertise (World Bank 2016b). Absence of motivation and drive among the university management for fostering research collaboration with industry may also be added to this list. These challenges are common to most of the Bangladesh higher education sector and have been blamed for impeding the process of generating innovations from research outputs of TEIs.

## **85. In recent years, TEIs in Bangladesh have been gradually developing strategic partnerships with industries for research and teaching.**

Collaboration with industries would strengthen TEIs' capacity to deliver quality teaching and undertake impactful researches. Until recently, only a select few TEIs in Bangladesh had formal industry partnerships or collaboration.<sup>41</sup> In efforts to promote university-industry engagement, the government provided funds to TEIs through development initiatives. In the university sector, around 10 public and private universities are conducting research to develop products to

<sup>41</sup> With the exception of a few specialized universities such as the BUET and the BAU which have been providing research and industrial testing services to the industry for some time.

be commercialized and used by partner industries under the higher education project. In addition, 33 public and private polytechnics have used institutional development funds to facilitate over 400 industry partnerships for workplace visit, guest lectures, and apprenticeships (World Bank 2018).

**86. Limited knowledge regarding management of IP, patenting, and copyright procedures in the TEIs is hampering commercialization of innovation.** Proper

knowledge on IP management and patenting can facilitate revenue generation from inventions, which in turn, incentivizes greater engagement in R&D work at universities and research institutions (WIPO 2016). In Bangladesh, faculty and management across TEIs remain largely unaware of the techno-legal aspects of R&D outputs, which may deprive them from payoff of public research for innovation. This is likely due to an absence of IP policy and management frameworks for the higher education sector in Bangladesh.<sup>42</sup>

## 5.4. POLICY OPTIONS FOR PROMOTING RESEARCH AND INNOVATION IN TERTIARY EDUCATION

**87. The preceding section highlights several key challenges to research and innovation in the tertiary education sector.** This section will draw on best practices to promote research and innovation in the tertiary education sector focusing on two objectives: first, to improve capabilities among academics to engage in high-quality research and second, to support development of ‘innovation ecosystem’ in maximizing the benefits from research through commercialization of the research outputs.

**88. More smart investments in research and innovation. Improved access to funds for enhancing research**

**capabilities among academics can work to promote quality research in the TEIs.** The overall scarcity of research grants and presence of research potentials would warrant an increase in research allocations for academics at the universities. The share of research allocation in the total budget for public universities may be increased to at least 5.0 percent<sup>43</sup> (from the current 0.5 percent). Private universities should also be eligible for receiving research grants. Policies for promotion of collaborative research with local and foreign entities need to be strengthened to further supplement the shortfall of public research spending. Properly designed

### BOX 7

## Promoting Research and Innovation in Universities in Bangladesh

The HEQEP offered 345 competitive academic innovation grants, out of which 132 grants that supported exclusively research projects have been awarded to 27 public and 9 private universities. Grants for research projects-financed activities to improve research capabilities in the supported universities, including the upgradation of laboratories and purchase of equipment needed to carry out the work.

One such innovation funded by the project is the invention of technology for detection of cancer using nonlinear optics by a research group led by Professor Yasmeen Haque at Shahjalal University of Science and Technology (SUST) in Bangladesh. With 9.6 million deaths in this year, cancer is a deadly disease with global effects. The research team is also in the process of developing a prototype device for the optical detection, diagnosis, and monitoring of the disease with great accuracy and without the need of chemical reagents. This novel technique will reduce the price of cancer diagnosis from US\$120 to under US\$10. With approximately 70 percent of deaths from cancer occurring in low- and middle-income countries, this technology will prove to be a game-changer in the field of health care.

<sup>42</sup> Under the HEQEP, an IP Policy and Management framework has been drafted for the university sector. These are yet to be institutionalized.

<sup>43</sup> There is no standard yardstick for appropriate ratios of research expenditure; however, universities worldwide are increasingly spending more on researches. For instance, universities in Australia allocated 39 percent of universities total operating revenue on R&D expenditure in 2012, whereas the share was 31 percent in 2002. (Universities Australia, 2015)

and executed competitive funding mechanisms should be in place to ensure the efficient allocation and use of research grants. In this aspect, the AIF competitive funding model of the higher education project in the universities provides a good example (Box 7). Universities were grouped according to academic capacities, and research proposals were evaluated transparently and awarded based on merit. The sponsored research projects have generated research outputs in agriculture, medicine, environment, among others and produced over 200 high quality research papers published in international and national peer reviewed journals.

**89. Enhancing access to and use of Internet and digital resources for education and research.** Further strengthening of access to Internet and quality publications is critical to support research in the TEIs. Today, access to the Internet plays an important role in determining quality of tertiary education and research. Investments in promoting access to the Internet and use of online resources needs to be further strengthened building on significant achievements made in the past several years. At the same time, there is high potential to support local innovations in the polytechnics and colleges that have limited or low-quality Internet access. Greater investments should be made to increase the availability of computers and improve access to high-speed Internet connection in these TEIs to encourage and support research and knowledge generation. With regard to online libraries, access to research publications and digital books should be expanded through expanding membership to the UDL to a greater number of TEIs and enriching the accessible contents of the digital library. Capacity and awareness of students and faculty on effective e-resource utilization need to be enhanced through training programs to maximize the use and benefits of these online academic facilities.

**90. Building enabling environment for innovations and promoting greater industry collaboration in research.** The commercialization of research outputs would be facilitated by strengthening of an ‘innovation ecosystem’ around universities, which is at a nascent stage in Bangladesh. Conducive environment for commercialization of research outputs from universities involve a complex process and

information network which involves a variety of stakeholders (for example, researchers, academics, industries, business developers, financiers, and policy makers) as well as institutions and rules for regulation and coordination.<sup>44</sup> The government’s recent efforts to promote mechanisms for university-industry collaboration provides the right direction for the development of innovation ecosystem in the universities. Competitive public grants (AIF) to universities with specific requirement for R&D collaboration with industry is one instrument noted to be working well under the GoB’s higher education project (HEQEP 2016b). Under the AIF program, an amount of US\$8.1 million has been allocated for universities to partner with an industry in R&D of commercial products and services. Through this effort, 10 public and private universities were awarded AIFs to implement collaborative research and commercialization projects with local industry partners. Additionally, intermediate organizations, such as Technology Transfer Offices, are being established to facilitate the process of commercialization and transfer of research outputs from the universities to the industry.<sup>45</sup> These initiatives together have supported the development of a nascent stage ‘innovation ecosystem’ in the beneficiary universities. The government should scale up these efforts to build up a functioning innovation ecosystem.

**91. Promoting more and high-quality international collaboration for research.** International collaborations in research can provide funding support and research capacity building among academics in Bangladesh. Greater collaboration with foreign entities is a prospective means to overcome weak research capacity, both in terms of funding and skills, which persists among the Bangladeshi research community (British Council 2015). International partnerships are noted to have a number of positive impacts such as improved likelihood of scientific breakthroughs, knowledge and resource sharing, and cost-saving benefits, as well as improvements in diplomatic relations<sup>46</sup> (British Council 2015). Much of the current international partnerships are based on individual relations and initiatives. More systematic, sectorwide efforts would be needed to promote and match research potentials in Bangladesh to prospective partners abroad.

<sup>44</sup> According to World Bank (2014), there are seven critical steps for building a world class innovation system: (a) generation of high-quality research; (b) building of strong and diverse academia relationships; (c) establishment of technology transfer offices; (d) establishment of university commercial arm, that is, a company structure (not-for-profit to start with) may be allowed for the commercialization of research but only for those select high-potential universities; (e) development of an IP management system; (f) government policy reforms which foster greater involvement of key stakeholders; clarify obligations of each stakeholder and spell out rules on the creation and exploitation of property rights, conflict of interests, and the establishment of policy safeguards; and (g) inclusion of incentives and rewards systems to encourage researchers and institutions toward R&D and innovation.

<sup>45</sup> Since 2014, the AIF under the higher education project in Bangladesh has supported the establishment of three Technology Transfer Offices in three public universities: Dhaka University, BAU, and BUET.

<sup>46</sup> Positive impacts are often made on both sides of the partnership. The impact evaluation of International Strategic Partnership in Education and Research (known as ‘INSPIRE’) Project in Bangladesh funded by the British Council, highlighted the mutuality of benefits in international research collaboration. It has been identified that the collaborations with Bangladesh academics have brought about many benefits to British academics, some of which include access to indigenous data/researchers, training of high-quality research students, catalyst for further project funding, and sense of worth (McGovern 2017).

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6

**GOVERNANCE  
AND MANAGEMENT  
IN TERTIARY  
EDUCATION**

# GOVERNANCE AND MANAGEMENT IN TERTIARY EDUCATION

## 6.1. BACKGROUND

92. What do we mean by ‘good governance’ for tertiary education? Good governance is an indispensable foundation for quality education. Simply put, good governance in tertiary education implies that the system and institutions perform service delivery effectively and efficiently with transparency and accountability to stakeholders. Improved governance has therefore become an entry point for raising institutional performance and overhauling weak education systems. Specifically, good governance in tertiary education improves the educational institutions’ capacity to make informed and rational decisions contributing to organizational efficiency and effectiveness that foster the development of high quality education and research (World Bank 2010; Lewis and Petterson 2009). Literature suggests some key areas to consider such as system and institutional governance and regulations, institutional autonomy, and quality assurance and performance management.<sup>47</sup> This section will focus on these critical aspects of governance and management for Bangladesh’s tertiary education system followed by a discussion on the key issues and policy options available, considering best practices.

**93. The governance structure of tertiary education in Bangladesh are distinctly different across subsectors with administrative and academic authorities divided across multiple central agencies.** Primarily, tertiary education is under the jurisdiction of the Ministry of Education (MoE). The MoE has two divisions, Secondary and Higher Education Division (SHED) and Technical and Madrasa Education Division (TMED), each headed by a permanent Secretary. The SHED is responsible for secondary education and higher education, while the TMED looks after TVET and ‘Madrasa’ (Islamic religious education). Central-level organizational structures and regulatory settings for governance and management in tertiary education are as follows. In terms of legislative framework, there has been no comprehensive legal framework<sup>48</sup> to provide regulatory directives in the education sector as a whole. Meantime, the National Education Policy (NEP) 2010 to some extent defines the overall formation of the higher education sector. The NEP 2010 defines the MoE as the apex body for policy direction and management of the higher education sector in Bangladesh while the various attached departments and institutions are its auxiliary agencies that carry out the government policies at the field level, implement various nondevelopment and development programs and projects.

**94. Higher education.** The SHED of the MoE manages the higher education sector through a directorate (the Directorate of Secondary and Higher Education [DSHE]) and one attached body (the UGC). The UGC, established in 1972,<sup>49</sup> is responsible for supervising and coordinating public and private universities, maintaining the quality standard of university education, managing the allocation of government funding to universities, and advising the government on issues related

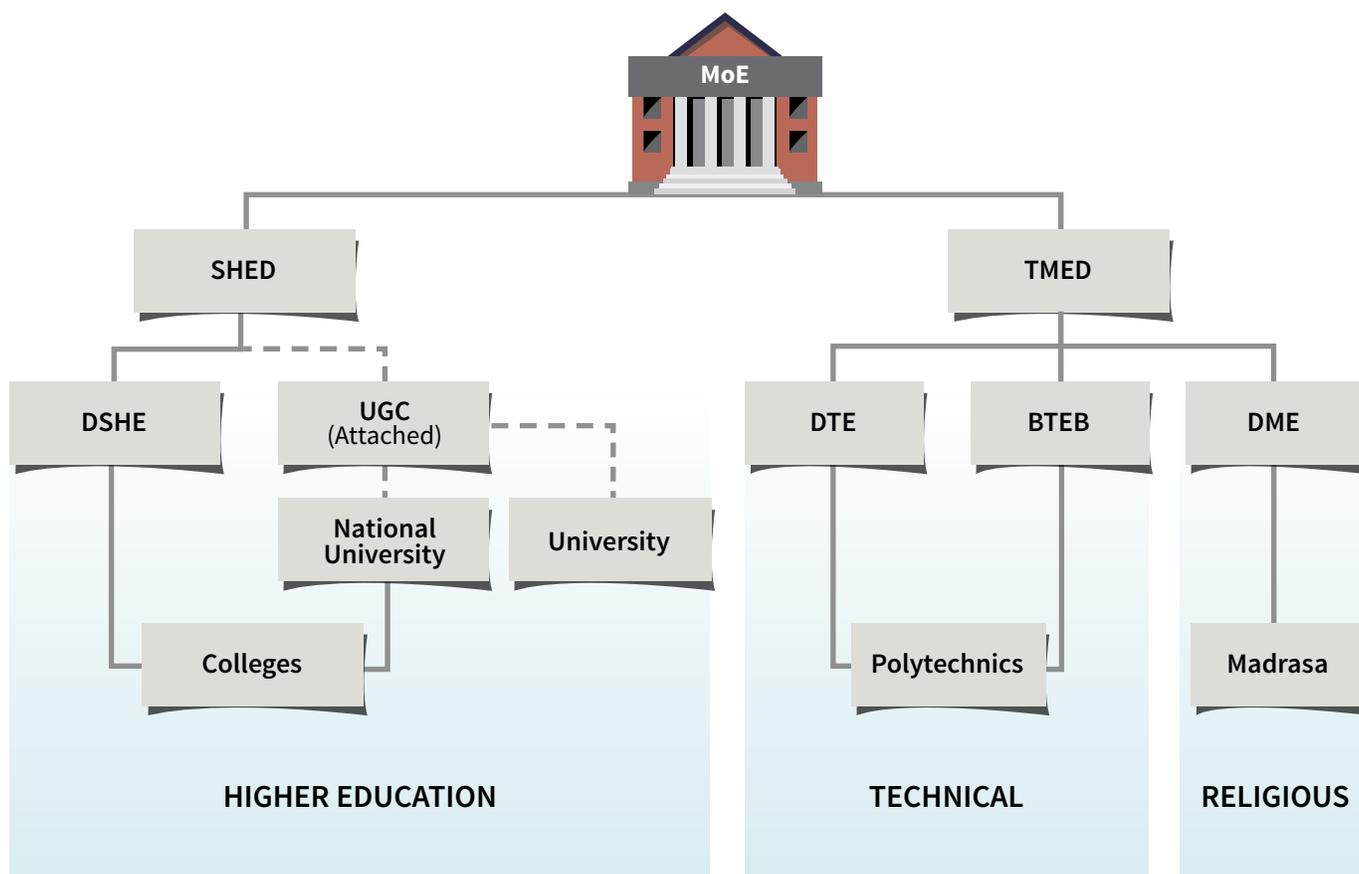
<sup>47</sup> These include Lewis and Petterson 2009; Rose, Lane, and Rahman 2014; World Bank 2010.

<sup>48</sup> The draft Bangladesh Education Act 2016 was endorsed by the Cabinet and disclosed for public opinion on the MoE website.

<sup>49</sup> The 1973 President’s Order No. 10 defines the role of the UGC as the lead coordinating agency in all matters of university education related to fund allocation, planning, development, and implementation of higher education and research programs in public universities as well as the monitoring of public and private universities.

to higher education. The public universities are fully autonomous academically and administratively, and governed by the provisions of their own acts or the President’s Order. The private universities are also autonomous entities and subject to the provisions of the Private University Act 2010. Tertiary colleges do not enjoy autonomy for their academic affairs, and the majority of them are affiliated to the National University<sup>50</sup>—one of the public universities—which provides oversight of academic affairs of the tertiary college subsector.<sup>51</sup> The DSHE is responsible for the administrative affairs of government colleges such as teacher recruitment and funding while a locally elected entity called the governing body (GB) is responsible for the administration of the nongovernment colleges.

**95. TVET.** The TMED of the MoE manages the TVET sector through the Directorate of Technical Education (DTE) and the BTEB. The DTE is the primary administrative authority with the responsibility of human resource management, development activities, and academic supervision in the sector. The BTEB is primarily an academic regulatory body responsible for managing the academic contents and standard settings, and certification of TVET graduates. Polytechnic institutions have little autonomy in deciding their academic program as it is the BTEB’s responsibility to design academic programs of polytechnics. Other than the MoE, 22 ministries operate various skills training programs for a diverse range of target groups.



**Figure 17:** Simplified Organogram of MoE for Tertiary Education

<sup>50</sup> The 1992 Act No. 37 authorizes the National University as the only higher education institution for the affiliation and academic responsibility of all colleges providing postsecondary general education.

<sup>51</sup> For instance, the National University controls curriculum contents, examinations, student registration, and teacher professional development in the affiliated colleges. Colleges do not possess authority to develop or revise curriculum. In parallel, there are some tertiary colleges affiliated to other major public universities. Affiliating universities oversee academic affairs of the affiliated colleges. For instance, six government colleges were reaffiliated to Dhaka University from the National University in February 2017.

**96. Tertiary-level Madrasa education.** Tertiary-level religious education also falls under the mandate of the TMED. The TMED supervised madrasas known as Aliya madrasa through its Directorate of Madrasa Education (DME). For educational affairs, those tertiary-level madrasas are affiliated with the Islamic Arabic University. The Aliya madrasa or Islamic Arabic University conferred degrees for graduate and postgraduate programs have

equivalence with university education degrees. Apart from these, there is a huge Madrasa education stream outside the government's management structure and purview, known as the Qawmi Madrasa system. The Qawmi Madrasa system has its own independent management body known as Befaql Madarisil Arabia, Bangladesh (known as the BMAB) and it maintains organizational setup from the primary to postgraduate levels.

## 6.2. INSTITUTIONAL GOVERNANCE AND MANAGEMENT

97. The institutional governance of the different public and private TEIs varies across different hierarchical entities as described in the following paragraphs.

**98. University.** In the public university sector, the governance structure and system revolve around Vice Chancellor (VC), Pro-VC, Treasurer, the Senate, the Syndicate, the Academic Council, the Finance Committee, and the Planning and Development Committee (see Annex 1 for organogram). The Syndicate is the main executing body within the university which holds, controls, and administers the property and funds of the university as well as regulates and determines all matters concerning the university as laid out in the various legal frameworks (the orders, the statutes, and the university ordinances). The Senate is responsible for endorsing the statutes on the proposals of the Syndicate; considering and passing resolutions on the annual report, the annual accounts, and the financial statement (Budget) presented by the Syndicate; and performing other duties as indicated by the university order or the statutes. The Finance Committee supervises the income and expenditure of the university and advises the Syndicate on all matters relating to accounts, property, and funds of the university while the Academic Council is the academic body of the university, with the control and general supervision responsibilities for the maintenance of standards of instruction, education, and examination within the university.

**99. The VC has the central role in the university governance structure** as the “whole time principal academic and administrative executive officer” of the university and ex officio Chairman of the Senate, the Syndicate, the Academic Council, the Finance Committee, and the Planning and Development Committee.<sup>52</sup> The VC, as the chief executive, is authorized to take measures for implementation of decisions of the Senate, the Syndicate, and the Academic Council. The VC is empowered to appoint lecturers on an ad hoc basis, to be subsequently approved by the Syndicate. The VC can also hire officers and employees on a temporary basis for a period of not more than six months and s/he must regularize such appointments by the Syndicate. The VC, Pro-VC, and the Treasurer are appointed by the Chancellor, who is the President of the Republic and they hold the office at the pleasure of the President.

**100. The governance structure in private universities is defined by the Private University Act 2010, with the Board of Trustees of each university playing the central role in its management and administration.** The governance structure revolves around the university Charter, Act, Board of Trustees, and officers. Each private university is given a provisional approval by the MoE in an Office Order subject to fulfillment of certain conditions which is a temporary approval granted by the government to enable it to function as a full-fledged university as provided under the Private University Act 2010. The formal approval is issued when the university

<sup>52</sup> In the old four, that is, Dhaka University, Rajshahi University, Chittagong University, and Jahangir Nagar University, the Pro-VC chairs the Finance Committee. In all other public universities, the VC is the chairman of the Finance Committee.

fulfills all conditions given in the provisional approval, the most important of which is functioning in a permanent campus. Each university has a 'Board of Trustees' registered under the Trusts Act of 1882 (Act No. II of 1882) and Societies Registration Act (Act XXI of 1860) and the 'Board of Trustees' which consists of a minimum of 9 and a maximum of 21 members constituted as per Articles 15, 16 of the Private University Act 2010. This Board oversees the Syndicate and other bodies involved with the management of operations of the university. The President of Bangladesh is the Chancellor and exercises his authority to appoint the VC, Pro-VC, and the Treasurer, based on the recommendation from the Board of Trustees. The VC is the chief executive officer of all academic and administrative affairs and reports to the Board on a regular basis.

**101. Colleges.** At the colleges, the Principal is the main authority for administering the academic and institutional management of the college by applying the rules and regulations determined by the MoE and supervised by the Directorate of Secondary and Higher Education and the National University. In government colleges, the Principal is the chief executive who reports to and implements the policies, rules, and regulations formulated by the MoE and administered by the Directorate of Secondary and Higher Education. The academic programs, discipline, curriculum, and standards including admission and holding of examination, assessment, and results for both government and nongovernment colleges are set and organized centrally by the National University. The government colleges are administered through the public service rules applicable to the employees of the Republic whose salaries and allowances are paid out from the Treasury. Although under the National University Act, a

GB is supposed to be in place at each government college to provide administrative and management advisory to the Principal, none of the government colleges have a GB. On the other hand, the nongovernment colleges, once certified by and affiliated to the National University, would principally be governed by their GBs under certain rules. Both the National University and the DSHE would have representation on the committee to recruit teachers in the nongovernment colleges from a pool of teachers recertified by the Nongovernment Teacher Registration and Certification Authority (NTRCA). As in government colleges, the Principal follows the academic regulations of the National University while administrative decisions are followed based on GB consultations. The National University supervises the academic management of all colleges and exercises the power to affiliate and de-affiliate the colleges.

**102. TVET.** The public polytechnic sector is also administered through the public service rules similar to the management system for government colleges. The Principal of the polytechnic reports and implements the administrative decisions of the institutions as determined by the DTE. All teachers and staff, including the Principal, are recruited by the DTE through the Public Service Commission and receive salaries according to government pay scale. By contrast, the administration of private polytechnics is led by the Principal under the guidance of a Board of Advisors. However, the government does, to a degree, influence institutional management as the DTE and BTEB rules and regulations on the academic system are followed by the private polytechnics, which eventually have implications for governance and quality issues in service delivery.

## 6.3. KEY ISSUES IN GOVERNANCE AND MANAGEMENT OF TERTIARY EDUCATION

### 6.3.1. Legislative backbone and coordination mechanism of tertiary education are fragmented

#### 103. Various legislative frameworks coupled with weak coordination capacity in tertiary education are eroding the ground for concerted and systematic effort for sectoral improvement.

Different laws that apply to the different subsectors and institutions in tertiary education create inconsistencies on governance structures, roles, and responsibilities of the various entities (World Bank 2017). Moreover, a large number of entities, complex governance structure, and an underdeveloped management capacity makes effective administration and coordination challenging at the central and institutional levels. Especially, the skills sector being involved with multiple ministries<sup>53</sup> and their affiliated institutions raises concern among policy makers on the capacity to ensure harmonized development efforts in the sector (GoB 2011). The management and supervision of institutions at the service delivery level are conducted largely through ad hoc and paper-based communication between central and local government agencies and the education institutions. Without proper monitoring mechanism in place, rules and regulations governing institutions often remain weakly enforced which have in turn significant implications for the provision of the quality of education.

### 6.3.2. Poor transparency and accountability are straining the effectiveness and efficiency

#### 104. Lack of transparency and weak accountability mechanisms are responsible for irregularities in major areas, including teacher recruitment, student enrollments, and student assessments.

A Transparency International Bangladesh (TIB) report finds teacher recruitments to be highly politicalized, often involving illegal payments made by candidates for lecturer positions in several public universities. Private university

recruitment also remains questionable with instances of appointment of teachers with lower qualifications than required for the position and over-recruitment of temporary teachers (TIB 2016a). Government teachers' recruitment in colleges and polytechnics is also politicalized as candidates with strong political affiliations and recommendations remain at an advantage irrespective of qualifications or performance. In case of nongovernment colleges, GBs largely influence teacher recruitments with preferred candidates hired despite not having the required qualifications (World Bank 2014). Teacher absenteeism remains a longstanding issue in the tertiary education sector, especially in the public universities, with no system in place to hold them accountable.<sup>54</sup> Academic integrity is further at risk with reports of question leaks, exam fraud, and academic malpractice, in both public and private sectors.<sup>55</sup> Unethical behavior of faculty and noncompliance of admission standards, including sales of leaked exam questions, acceptance of illegal payments, and nepotism are reported to occur in entrance examinations of universities (TIB 2016b). In the private university sector, issuance of 'fake certificates' and illegal payments to increase marks or pass exams have also been found (TIB 2016b).

#### 105. In the absence of proper accountability systems, state controls create rigidity in institutions' capacity to be responsive and flexible to evolving social and economic needs.

With the exception of public universities, government tertiary colleges and polytechnics lack the autonomy to take and implement critical academic, human resource, and financial decisions. For instance, it can take up to two to three years for colleges and polytechnics to introduce a new education program involving a long approval process which goes up to the BTEB and the National University, respectively. Long bureaucratic processes and limited access to funds often deter these institutions

<sup>53</sup> A skills mapping survey finds that 22 ministries are involved in skills training.

<sup>54</sup> Public universities do not have teacher management manual to ensure academic and teaching discipline among the faculty. Politicization prevents the authority to hold them accountable for nonperformance, absenteeism, and open indulgence in political activities.

<sup>55</sup> Only when directed by the MoE, UGC investigates into complaints of management malpractice and corruption and submits its findings to the MoE. The MoE takes decision on necessary action. The UGC has no power to initiate and take disciplinary action against universities. At the institutional level, public universities often set up investigative bodies against allegations of academic malpractice, who report to the Syndicate for taking action. The findings and outcomes of these reports are seldom publicly available.

from pursuing innovative academic, cultural, and infrastructural development activities. Additionally, limited autonomy leads to underdeveloped management and decision-making capacity at the institutional level.

**106. Student political bodies have strong influence on the institutional governance and management of public TEIs, often creating adverse impacts on the teaching learning environment.** Student politics in the government TEIs is deeply rooted in the system not least because of the significant role it played in the country's independence. However, it is a commonly held belief that student politics of the present state and nature are adversely affecting the transparency and efficacy of institutional governance, particularly in terms of administration of examinations and actual number of class days. Recurring episodes of violence and havoc during examinations as well as disrupted teaching periods are reported to have a negative impact on the academic environment of the government TEIs (World Bank 2014).

### **6.3.3. Quality assurance system is yet to be fully developed**

**107. Quality assurance in the tertiary education sector, a relatively new concept in Bangladesh, has been picking up quickly in public recognition and policy priority.** Quality assurance in the higher education sector will be governed by the recently enacted<sup>56</sup> Bangladesh Accreditation Council (BAC) Act, which lays the foundation for ensuring quality education delivery in the higher education institutions, including public and private universities and tertiary colleges. Under the BAC Act, an Accreditation Council is in the process of being established. The BAC will be an independent autonomous body responsible for overseeing the quality of higher education delivered at the institutions and assess it against the benchmark given in the National Qualifications Framework. It would receive applications for accreditation of programs at the initial stage and later, institutions, and conduct external assessments of the quality of teaching and learning in the higher education institutions. The BAC is also assigned to support the IQAC at all universities through the development of standards, guidelines, and code of good practices and assist to develop their own procedures, techniques, and modalities for self-assessment.

**108. The institution-level quality assurance process incorporates the cycles of student feedback which is expected to serve as a platform to reflect student voices in institutional governance.** Student feedback to inform institutional governance and management has been recently introduced in the university sector through the establishment of an institutional quality assurance mechanism in 69 public and private universities. As part of self-assessments, the universities receive feedback from teachers, students, staff, and employers on teaching-learning aspects to incorporate into the institutional development action plan (Box 8). Previously, there had been few official attempts made in universities in Bangladesh to consider students feedback in institutional management. The student feedback

## **BOX 8**

### **Examples of Use of Student Feedback in Higher Education in Bangladesh**

Student feedback from self-assessment was used to bring several improvements in teaching learning and program administration. For example, some departments of public universities such as Dhaka University and Khulna University created more enabling mechanisms to support students participating in extracurricular activities, for example, flexible class exam system and participation in inter-university competitions. On the other hand, private universities such as North-South University, South East University, and United International University undertook curriculum revision based on outcome-based education model, established or revamped alumni association, allocated dedicated library space for group work, and expanded medical and transportation facilities for students.

<sup>56</sup> BAC Act became effective on March 21, 2017, with its publication in the Bangladesh Gazette.

mechanism in the quality assurance system would create a platform for students' voices to be officially heard by institutions' leadership to enable greater transparency and accountability and more participatory institutional improvement efforts. As of 2018, tertiary colleges are yet to start implementation of the institutional quality assurance mechanism.

**109. In the TVET sector, the National Skills Quality Assurance System (NSQAS) was established under the NSDP 2011 as a regulatory framework for quality assurance across the subsector.** The NSQAS is a comprehensive system covering all entities engaged in the acquisition of skills, including graduates, teachers, training courses, workplaces, training organizations, and industry. The NSQAS includes (a) accreditation of nationally recognized units of competency, qualifications, and course specifications; (b) registration of public and private training providers; (c) accreditation of learning and assessment programs leading to nationally recognized units of competency and qualifications; (d) auditing of training providers for compliance against quality standards; and (e) validation of assessment tools against units of competency. To implement quality assurance and accountability of technical education and training programs, the government has established the National Technical and Vocational Qualification Framework (NTVQF) in which competency-based skills standards are defined for a variety of technical and engineering specialties and at multiple levels. All the TVET institutions are expected to design and implement their skills training programs based on the NTVQF, and students are expected to be assessed against its competency standards. BTEB is the custodian of the NTVQF system. However, as of 2018, the implementation progress of the NTVQF in Bangladesh has been less than satisfactory due to capacity constraints at the central and institutional levels.

### **6.3.4. Academic, financial, and personnel management systems are generally rigid especially in colleges and polytechnics**

#### **6.3.4.1. Academic Management**

**110. Universities have to go through a lengthy process to adjust their course contents or create new programs.** Though universities enjoy the fullest amount of academic autonomy, they still have to follow procedures given in the governing legal frameworks which often take significant amount of time. Universities

develop their own curriculum and teaching processes at the department level in the universities. However, before offering any new academic program, establishing a new department, and increasing the number of teaching positions, the universities require approval from the UGC according to the institutional legal frameworks. This allows UGC to conduct quality assurance reviews for the proposed program and in the case of public universities, to assess the requirement of additional funds for opening of the department and salary of new staff. In case of admissions and examination recesses, all universities have their own institutional rules and regulations for setting admission requirements, conducting admission tests, determining the seat availability across programs, and selecting candidates. Drafting of curricula, student assessments, and degree awarding are conducted by each program offering entity, that is, department through their examinations committees where an external member is included.

**111. Tertiary colleges and polytechnics strictly follow centrally developed academic programs.** The tertiary colleges and polytechnics follow centralized educational standards for curriculum and teaching processes approved respectively by the National University and the BTEB. The National University holds the authority over curriculum design, administration of examinations, awarding of degrees, and student admission in the tertiary college. Tertiary colleges have to apply for opening of a new academic program and department, staffing pattern which are examined and approved by the National University following its regulations. Similarly, the BTEB holds responsibility for the development of all programs and curriculum for technical diploma education, administration of national examinations, and awarding of degrees for all public and private polytechnics. In case of admissions, the BTEB centrally carries out the admission process for all public polytechnics, while private polytechnics administer independently. All polytechnics have to apply to the BTEB for setting up of new academic programs and get its approval. The lack of academic autonomy in the government tertiary colleges and polytechnics constrain flexibility to quickly respond to the skill demands of the job market and to adapt to the rapidly changing economic environment.

#### **6.3.4.2. Human Resource Management**

**112. Teacher recruitment is strictly regulated by the government for public tertiary colleges and**

**polytechnics.** The government tertiary colleges and polytechnics have no authority in faculty and staff recruitment. Government colleges and polytechnics annually provide their staff deployment needs to the DSHE and the DTE, respectively, who then place requisition needs to the MoE. In case of new recruitments, the MoE reviews the need for teachers' positions and places the requisition order to the Ministry of Public Administration (MoPA). However, the number of all teaching and non-teaching staff positions in each government institutions has to be prior approved by the MoPA and the Finance Division. Additionally, any increase in the agreed number of staff positions in an institution has to be approved afresh by the Finance Division for budget allocation implication. On the approval of sanctioned positions, the MoPA initiates the teachers' recruitment through the Public Service Commission (PSC). The entire process involving call for applications, written assessments, and interviewing and selection of candidates occurs through the PSC and the MoPA and can take up to one to two years with backlogging of recruitments. As a result, government colleges and polytechnics suffer from a chronic shortage of qualified teachers as vacant posts are not filled up on time. This problem is compounded by over-staffing at the metropolitan city institutions, depriving the district-level colleges of teachers, where large number of positions remain vacant.

**113. Quality concerns remain in teacher recruitment for nongovernment colleges and polytechnics.** In case of nongovernment colleges, teacher recruitment is done through their GBs (GBs have representatives of the National University and DSHE as members) from a pool of teachers precertified by the NTRCA. However, serious concerns remain over the transparency of nongovernment college teacher recruitment. The GBs are entitled to recruit teachers of their choosing as long as they are NTRCA-certified teachers. This gives GBs a leeway to exercise their influence and recruit certified but less competent candidates who may be well-connected or have approached GB members in nontransparent manners. To overcome this challenge, the MoE has been in the process of reforming the system by establishing a new Nongovernment Teachers Selection Commission (NTSC), which would replace the NTRCA

and work to ensure competitive and purely merit-based selection process for recruitment of nongovernment college teachers. The MoE has already amended the NTRCA rules and set up a drafting committee for framing of the NTSC Act to move forward toward reforming the system. In case of nongovernment polytechnics, recruitment responsibilities rest fully with the polytechnic management, with no provision for quality checks by the government.

**114. Universities enjoy full autonomy in faculty and staff recruitment though there are governance and quality concerns over teacher recruitment at private universities.** Unlike other government TEIs, the public universities have the power to create teaching posts, open new programs and departments, and recruit and promote teachers based on needs, subject to the concurrence of the UGC and the Finance Division. The recruitment of university teachers is conducted by a selection committee headed either by the Pro-VC (academic) or the VC, depending on the position.<sup>57</sup> Private universities generally follow the same recruitment procedure of the public universities whereby the VC heads the selection committee for all positions and external members come from the public universities. However, here too the overbearing influence of the Trustee Board and its Chairman and Directors plays the dominant role. A large number of temporary teachers teaching at the universities has been a contentious issue, raising governance concerns on the proper human resource management as this population is generally found to have lower satisfaction levels with their jobs compared to permanent colleagues (Hossain and Hossain 2016). On average, temporary teachers account for around one-third of all teachers in the private universities, indicating a large dependency on them for ensuring regular teaching at the universities.

**115. Promotions in public universities are based on some competency and performance considerations, while college and polytechnic teachers are promoted primarily based on seniority.** Government teachers are paid salaries according to the government pay scale and their career path is guided by the promotion rules framed by the MoE regulated under the provisions of government service rules.<sup>58</sup> Promotions to higher posts in public

<sup>57</sup> Pro-VC heads the committee for lecturers and assistant professor positions, while it is the VC for associate professor and professor positions.

<sup>58</sup> This is known as Bangladesh Service Rules (also known as BSR).

universities are not automatic but follow the procedure of fresh recruitment while considering some competency and performance indicators such as post-master's degree, years of experience, and number of publications. There is also a provision of internal promotion by which a candidate is automatically promoted to the higher post if he/she fulfils certain criteria. On the other hand, the government college and polytechnic teachers' promotions basically depend on their years of service, that is, seniority, not taking into consideration performance-related criteria.

#### **6.3.4.3. Financial management**

**116. Public colleges and polytechnics have no financial autonomy and flexibility in income generation.** Government colleges and polytechnics

do not have the power to raise and spend additional funds over the government-disbursed budget amount while having to strictly adhere to government rules, regulations, and directives. Both government colleges and polytechnics submit operational budget needs across line items that are given in a prescribed template and submit to respective directorates, who review and approve the budgets and forward to the MoE for fund allocation in the next year's budget. On the other hand, funds for development projects follow a different trajectory. To undertake a development project for any public TEIs, the concerning directorate or UGC would submit a draft development proposal for approval of the government through a rigorous and often lengthy process of review led by the Ministry of Planning.

## **6.4. POLICY OPTIONS FOR PROMOTING 'GOOD' GOVERNANCE AND MANAGEMENT IN TERTIARY EDUCATION IN BANGLADESH**

**117. Setting up an umbrella legislation to support the government to overcome the inconsistencies across various dated legislations covering different subsectors and institutions.** Considering the recent changes in tertiary education, such a legislative framework would be required to confirm the governance structures, roles and responsibilities, as well as, recognize quality assurance mechanism. The strengthening of anticorruption safeguards in high-risk areas such as teacher recruitment and financial management through review and enforcement of regulations would further improve governance in TEIs.

**118. Strengthening management capacities at the ministry and institutional levels.** Technology-based tools, including enhancing management information systems in the university, tertiary college, and polytechnic sectors, can improve monitoring and management of the tertiary education sector. Improved Internet connectivity across all the TEIs would support speedy information flow and decision-making process between the ministry and TEIs. Additionally, continuous professional development for tertiary education administrators at all levels would be required to ensure they are nurtured and prepared to execute challenging management responsibilities.

**119. Institutionalizing quality assurance at the national and institutional levels.** The implementation of the Bangladesh Accreditation Council (BAC) Act would curb quality issues in the higher education sector, including universities and colleges. The finalization and adoption of the National Qualifications Framework involves reforms envisaged in the BAC Act for improving the quality, accessibility, links, and recognition of graduate qualifications nationally and internationally. However, the NQF would have to be aligned with the qualifications framework developed for technical education and the NTVQF to support better comparability and articulation between TVET institutions and higher education institutions.

**120. Exploring the possibility of increasing autonomy for high-performing government colleges.** The government should consider experimenting with some high-performing government colleges and polytechnics to increase their autonomy in academic, personnel, and financial management. For instance, high-performing institutions may be allowed to establish new academic or vocational programs that are demanded by local industries or adjust academic contents to keep themselves updated with most advanced knowledge or

add contents from local economies. Some institutions may attempt to adjust program contents to allow for more participatory teaching methods. Some institutions in industrial areas may venture into forming collaborative training programs or R&D programs, or initiate consultancy works to generate their own stream of revenue. Granting some autonomy with clear objectives and monitoring system may enhance such flexibility in responding to emerging demands from local situations.

**121. Institutionalizing student feedbacks and graduate/employer feedback mechanisms to improve accountability in the management of TEIs.**

Student and teachers' feedback are important inputs to academic audit and performance assessment of TEIs. Incorporation of such feedback to inform institutional management and decision-making process has been introduced in the university sector through the establishment of the institutional quality assurance mechanism in selected universities. In particular, it is important to institutionalize and regularize student feedback process to monitor quality improvement. Every academic course should solicit feedbacks from students about contents, pedagogy, and structure of the course. The government may consider supporting all types of TEIs, including tertiary college and polytechnics, to undertake similar academic audit with stakeholder feedback at a regular interval. In addition, accountability should not stop within the institution. There will be considerable gains to be made by tracking former students after graduation, obtaining feedbacks from their employers, and publishing the results to the public. That would give TEIs a real sense of the relevance and benefits of their education programs and give them more incentives to be accountable to the needs of the society and economy.

**122. Leveraging technology-based solutions to preserve academic integrity.**

The government may explore technology-based solutions for admission,

examination, and issuance of certificates to curb incidences of fraud and malpractice. The National University provides a good example of curbing incidences of tampering of student enrollment papers through conducting the admission process online. With the aim to check 'certificate fraudulence', the UGC took the decision to set up a 'central database unit' for all university graduates; however, the system is yet to be developed. The government may consider developing an integrated tertiary education student tracking system from enrollment to graduation to improve governance in student management.

**123. Delinking teachers and students' affiliation with political parties and working as the latter's front organization in universities.**

While political activism of students had a positive influence on the freedom movement of the country in the past from the 1990s, it has become an impediment for ensuring good governance in higher education institutions, especially in public universities. Often, teachers remain highly fragmented in factional conflicts and feuds, resulting in drastic fall in academic discipline and maintenance of quality in all aspects of education. Though it may not be possible to remain fully immune from the political developments occurring outside the campus, universities may consider restricting political activism on the campus to preserve the quality of the learning environment. For example, the government may consider imposing a temporary ban on the open participation of national political parties' programs on the campus, especially by students' organizations affiliated to political parties. At the same time, the government may allow students' unions to function on the campus on nonpolitical platform. There are examples of private universities not allowing political programs on their campus and students' overtly political party activity. Therefore, this could also be replicated in public universities too.

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7

# FINANCING OF TERTIARY EDUCATION

## 7.1. BACKGROUND

**124. The need for a stable and more funding dedicated to tertiary education in Bangladesh is clearly highlighted in the Strategic Plan for Higher Education (2018–2030).** Because tertiary education contributes to the development of a critical mass of professionals and experts needed for sound economic development in modern knowledge-driven economies, increased budgetary allocations toward investment in tertiary education are strongly warranted. Despite this, Bangladesh has long been providing relatively low public funding allocations to the education sector in general and tertiary education in particular. Public expenditure on education sector in Bangladesh is relatively low when compared to international standards. Indeed, Bangladesh is ranked 155<sup>th</sup> among 161 countries, when comparing public spending in education as a share of GDP (Bangladesh Economic Review, 2015).

**125. The returns to tertiary education has been consistently high over time in Bangladesh.** The private rate of returns to each additional year of education in different levels for 2005, 2010, and 2016 are provided in Table 12. While the rate of returns to additional years in primary and secondary levels are decreasing over time, the rate of returns to tertiary-level education has been consistently over 20 percent between 2005 and 2016.<sup>59</sup> Against the backdrop of a growing supply of workers with tertiary education qualifications, this sustained level of return to tertiary education or wage premium would probably indicate that there are equally growing demands from the economy for highly skilled workers that tertiary-level education and training could supply. As the country's economy is increasingly modernized and globalized, it would not be surprising to see that the trend continues into foreseeable future. This clearly offers a strong rationale for more public and private investment in improving and expanding tertiary education in Bangladesh. The returns to tertiary education being the highest is also consistent with the conclusion derived by Montenegro and Patrinos (2014) comparing returns to schooling globally.

**Table 12:** Rate of Return to Additional Year of Education at Different Levels in Bangladesh

Level	2005	2010	2016
Primary (Grades 1–5)	7.5%	5.5%	4.0%
Secondary (Grades 6–12)	6.8%	5.4%	4.6%
Tertiary (bachelors and above)	20.5%	22.8%	20.5%

*Source:* Authors' calculations based on Household Income and Expenditure Survey data.

<sup>59</sup> Given that very few observations of individuals who have taken technical education in this nationally representative sample, their returns to education are not calculated.

**126. This review has taken note of the paucity of reliable evidences about the situation and issues of financing tertiary education in Bangladesh.** There has not been a comprehensive sector-level public expenditure assessment done for the education sector, except for a succinct overview given in the overall public expenditure review in 2010 (World Bank 2010).<sup>60</sup> There is hardly any

data on budgets and expenditures of TEIs available for in-depth and systematic analysis. It is evident that a sector-specific in-depth public expenditure review for education inclusive of tertiary education is critically needed and would be extremely useful for promoting policy dialogue toward more effective and efficient resource allocation for better education outcomes in Bangladesh.

## 7.2. STATUS AND ISSUES OF FINANCING IN TERTIARY EDUCATION IN BANGLADESH

### 7.2.1. Public expenditure on tertiary education in Bangladesh is in line with global trends

**127. There is a strong rationale for greater public investment in higher education in Bangladesh.** Investments in tertiary education are likely to improve workforce productivity, benefiting the society at large. At present, tertiary graduates in Bangladesh fill the position of highly technical and skilled professionals in public and private entities in manufactures, education, and information communication technologies, among others. Improvements in access and quality of tertiary education would have considerable benefits beyond private gains accruing to individual students, contributing to higher skills and productivity demands of the expanding economy. However, this access to higher levels of education is currently biased toward richer segments of the population, indicating unrealized productivity gains. Moreover, market failures brought by information asymmetries are more likely to lead to underinvestment in higher education as individuals do not recognize the actual gains from the investment. Second, the scientific and knowledge outputs from the research that are developed by universities are important innovations that propel economic development within and outside a country. Studies have linked technology as one of the strongest determinants for sustainable competitiveness and long-term growth (Lichang 2011; Sener and Saridogan 2011). However, the high cost and risks associated with research have already led to underinvestment in R&D work which generates public good. There is a need for public financing to facilitate collaboration between universities and firms.

**128. The overall allocation of government spending on education as share of the total expenditure exhibits a mixed trend but is in line with the global target.** In the regional context, expenditure on education as a share of total government expenditure in Bangladesh between 2010 and 2015 (Table 13) has been lower than that of Nepal but higher than that of India and Sri Lanka and higher than the OECD 2013 average of 11.2 percent. Benchmarked against the global target range of 15–20 percent set at the Incheon Declaration adopted by the World Education Forum in 2015, Bangladesh has been operating within the range. Given the fact that education expenditure as a percentage of total government expenditure in Bangladesh is within the world target, the challenge is to sustain it and ensure accountability while exploring avenues of increasing the levels toward the maximum level of the world set target.

**129. However, as a percentage of GDP, the expenditure level has been stagnant at a low point— at approximately 2 percent.** The current level of expenditure on education as a percentage of GDP achieved by Bangladesh is lower than the world target range of 4–6 percent set at the 2015 World Education Forum in held in Incheon, Republic of Korea. Compared with regional member countries, the proportion of GDP dedicated to education in Bangladesh is lower than that of India and Nepal and relatively equal to that of Sri Lanka (Table 13). Moreover, allocations to education as a percentage of GDP, in Bangladesh are lower than the OECD 2013 average of 4.8 percent. The forum recognized that the proposed SDG 4 for education would not be achieved without a significant and well-targeted increase in financing as percentage of GDP.

<sup>60</sup> The paper was updated in 2015. It provides an analysis of overall public expenditure and brief sectoral reviews.

**Table 13:** Trend in Public Expenditure on Education in South Asia Countries

Country	Years					
	2010	2011	2012	2013	2014	2015
<i>% of total public expenditure</i>						
Bangladesh	—	16.8	15.6	13.8	—	15.6
India	11.7	13.7	14.1	14.1	—	—
Nepal	16.0	18.0	17.4	18.2	18.3	17.1
Sri Lanka	8.6	9.1	8.4	9.3	10.8	11.0
<i>% of GDP</i>						
Bangladesh	—	2.1	2.2	2.0	—	2.2
India	3.3	3.7	3.9	3.8	—	—
Nepal	3.6	3.8	3.8	3.5	4.0	3.7
Sri Lanka	1.7	1.8	1.5	1.6	1.9	2.2

Source: World Bank Data (2015) and UIS Data (2015).

**130. Disaggregating expenditure on education by the level of education reveals a bias against and recent improvement for tertiary education.** Over the past decade, Bangladesh's allocation of public expenditure for tertiary education in the total education expenditure had been in the range of 10–13 percent, which was lower than what India and Sri Lanka allocated to tertiary education and more or less at par with Nepal. This indicates that the GoB had not necessarily prioritized the investment in tertiary education, relative to the primary and secondary levels of education. However, most recent data show a gradual shift toward greater resource allocation to tertiary education, which coincides with the surging enrollment in tertiary education as discussed in the previous chapter. In 2015, around 20 percent of the total education expenditure went to tertiary education, nearly doubling the share from only 10 percent in 2011 and bringing it close to the level where Sri Lanka traditionally has been.

Notably, in the meantime, the shares of tertiary education in education expenditure in other countries in the region did not increase, if not decreased.

### **7.2.2. Private expenditure on tertiary education is relatively high**

#### **131. Establishing the proportion and level of private expenditure on tertiary education is a major challenge facing many developing countries including Bangladesh.**

The absence of a policy framework aimed at facilitating and streamlining private sector engagement in tertiary education financing makes it difficult to ascertain the proportion of private sector expenditure in tertiary subsector. Discussions about private expenditure on tertiary education tend to be limited only to two vantage points: (a) expenditures borne by households and students and (b) expenditures borne by other private entities such as religious organization, charities, and business associations.

**Table 14:** Trend in Share of Tertiary Education in Total Education Expenditure (Country wise)

Country	Years					
	2010	2011	2012	2013	2014	2015
Bangladesh	—	10.3%	14.7%	—	—	20.0%
India	36.1%	34.7%	32.2%	28.5%	—	—
Nepal	12.7%	11.8%	11.9%	11.3%	11.4%	10.8%
Sri Lanka	16.4%	17.8%	18.7%	21.1%	20.2%	19.4%

Source: World Bank Data (2015) and UIS Data (2015).

**Table 15:** Annual per Student Education Level wise Expenses in Bangladesh (in nominal BDT)

Level	Private Spending				Public Spending
	2005	2010	2016	2016 (direct cost)	2016
Primary (Grades 1–5)	1,281	2,500	4,769	747	7,213
Secondary (Grades 6–10)	4,207	7,377	11,549	2,024	6,498
Higher Secondary (Grades 11–12)	9,009	14,122	18,204	4,313	9,598
Bachelors plus	15,138	17,958	22,870	6,805	20,924

**Source:** Authors' calculations based on Household Income and Expenditure Survey data for private expenses; BANBEIS 2016 for per student public spending 2016.

**Note:** Figures for 2005, 2010, and 2016 include all the out-of-pocket expenditures for supporting schooling of a child; figures for 2016 (direct cost) include only the expenditures that are paid to the institution (that is, tuition and other fees), for comparison with public spending.

### 132. The private education expenses incurred by the households have been playing a significant role in funding the education sector in Bangladesh at all levels, especially at higher levels of education.

Families spend a lot of money to cover various out-of-pocket education expenditures of their children.<sup>61</sup> The expenditure goes up at higher levels of schooling. For example, on average, the private expenses for secondary-level education were double the amount for primary level in 2016. Tertiary education proves to be quite an expensive investment for families. On average, tertiary education costs households 1.26 times more than higher secondary education does. In the local currency, it costs them around BDT 23,000 annually (US\$295 at the then prevalent exchange rate of BDT 78 per US\$1) in 2016, which is not an insignificant amount of money in a country with per capita GDP of US\$1,358. In comparison with the cost of education service provision borne by the government, contributions from households clearly play an important part in financing education institutions in Bangladesh. In terms of per student expenditure, the ratio of public and private spending in tertiary education is roughly 75 percent public and 25 percent private.<sup>62</sup> Low level of public education investment as discussed earlier is being compensated by families of students. The high level of private investment required at higher levels of education is likely to pose challenges especially for economically disadvantaged children, not only in terms of paying for direct costs such as tuitions but also for covering indirect costs like private tutoring costs to

enable children's study. Over the years, the burdens on families seem to have increased. The private education expenditure (in real terms) increased significantly for primary and secondary levels while remaining more or less unchanged for tertiary students.<sup>63</sup> This increase may partly be motivated by intensified social pressure on students to achieve high marks at the secondary-level national examinations.

### 133. Students in tertiary education often rely on borrowing from families and relatives to pay for various private out-of-pocket expenses.

A recently conducted graduate tracking survey of tertiary-level college graduates reveals that around one in six (17 percent) college students, especially male students from rural areas, borrowed money from families and relatives or from nongovernmental organizations, to finance part of their cost of college study. The share goes up to around 30 percent among polytechnic students in Bangladesh, according to a graduate tracking survey on polytechnic graduates. This higher incidence of borrowing among polytechnic students is probably due to the higher out-of-pocket expenditures among polytechnic students and the fact that they tend to be from less-affluent families. In both cases, families and relatives are by far the main source of loans, followed by nongovernmental organizations. It seems quite unusual for postsecondary students and their families in Bangladesh to take loans from banking institutions. Borrowing from informal sources like families and relatives is unreliable for many

<sup>61</sup> Private education expenditures here include fees and expenses for admission, tuition, examination, private tutoring, uniform, textbooks, exercise books, transport, and tiffin/snacks.

<sup>62</sup> International experience of private spending on tertiary education can be drawn from the OECD member countries. Available data show that in 2013, the OECD average ratio of public and private spending on tertiary education was 70 percent public - 30 percent private (<https://data.oecd.org/eduresource/spending-on-tertiary-education.htm>). Some member countries, for instance, Scandinavian countries registered low contributions from the private sector (less than 10 percent of the total). Some member countries such the United Kingdom and New Zealand have stricken a more equal balance (close to 50-50). Proportions of private spending on tertiary education for member countries like the United States (64 percent), Japan (65 percent), Australia (58 percent), and Korea (68 percent) exceeds public spending.

<sup>63</sup> The overall prices increased 222 percent due to inflation between 2005 and 2016 in Bangladesh.

poor families whose relatives are also likely to be not so rich. This suggests that there may potentially be a large number of meritorious students who are unable to go up to postsecondary education because of lack of access to loans.

### **7.2.3. Budgeting and accountability mechanism follow the traditional system**

**134. The government funding system for public tertiary institutions is characterized by the two-envelope model**, each envelope following a separate procedure: (a) Nondevelopment budget, and (b) Development budget. The nondevelopment budget allocations to public tertiary institutions are dedicated toward meeting the recurrent costs such as salary and benefits of teachers and other staff, services, and supplies, and it is designated in the budget template as revenue expenditure. The development budget is allocated for purposes of improving the academic environment and physical infrastructure. Expenditures related to building constructions and purchase of textbooks and equipment fall under this category. The process of allocating the development budget is entirely different from the process for allocating the nondevelopment budget. For requesting development budget allocations, it has to be processed through the Planning Commission and funds would be disbursed to the institutions in huge tranches through a separate mechanism called Annual Development Program (ADP). The development budget allocation varies across years. During FY2016/17, the share of development budget that went to the MoE was 25 percent. Over the last 15 years, this figure has fluctuated widely—it was as high as 29.8 percent in 2004 and as low as 17.6 percent in 2007.

**135. The budgeting process of the tertiary education sector is based on a traditional funding method of incremental budgeting with line items defined by economic codes.** In the traditional funding methods, the allocation of funds is determined through a negotiation between the government and TEIs, by referring to the input criteria and historical trends. The procedures for allocating budget are based on the proposal submitted by the institutions to the government as the starting point of the negotiations. The method basically involves the different units, sections, divisions, departments, or

faculties of the institutions drawing up their respective budget estimates (using a prescribed format). The budgets are then submitted to the respective finance departments for consolidation and reviewed by the finance or budget committee of the institution, before submission to the responsible GB. Budgets from public universities are submitted to the UGC for consolidation, review, and eventual submission to the MoE. Those from public TVET institutions are submitted to the DTE. In the same vein, public tertiary-level colleges submit their budgets to the DSHE. All the budgets from the three segments of tertiary education submitted to the MoE are then submitted to the Ministry of Finance (MoF). The Financing Division of the MoF allocates funds based on the projections indicated in the three-year Medium-Term Budgeting Framework (MTBF). Private TEIs prepare budgets based on the receipts of tuition and other fees from students and forecasted expenditure in a financial year and get it approved by the Board of Trustees. In principle, private TEIs do not receive subsidies from the government for their budgets and operate entirely on the revenue from tuition and fees. All public and private TEIs are mandated to undergo financial auditing respectively by the public and private auditing agencies.

**136. Performance-based financing (PBF)**<sup>64</sup> is not currently being practiced under the tertiary subsector in Bangladesh, although a variant of it is currently being practiced under primary subsector and performance-based institutional grant scheme is being implemented by development projects. The idea behind PBF in tertiary education is that institutions in this case receive state budgets through incentive-oriented instruments like performance agreements or formulas linked with performance for calculating grants. Experience from Europe, Australia, and North America, for example, shows a major shift to PBF all across the education sector, including tertiary education. Trends like lump-sum budgeting, formula funding, performance, or target agreements have been adopted in many countries and have gradually replaced traditional models based on line items and incremental budgeting (Ahmad et al. 2015; Sharma 2004). In the tertiary education sector in Bangladesh, such financing models have never been tried. In limited scale, institutional grant programs with

<sup>64</sup> In generic terms, results-based financing or PBF is defined as any program where the principal sets financial or other incentives for an agent to deliver predefined outputs or outcomes and rewards the achievement of these results upon verification (Musgrove 2010). In the development cooperation arena, the principal is usually a national or subnational government body of a developing country, and the agent is an implementing agency or institution such as UGC or TEI. <https://www.rbhealth.org/sites/rbf/files/documents/Rewards%20for%20Good%20Performance%20or%20Results%20-%20Short%20Glossary.pdf>.

performance contracts have been implemented under the donor-funded development projects for universities, colleges, and polytechnics to channel development funds to institutions in more accountable and competitive ways.<sup>65</sup>

**137. Financial accountability modality for TEIs is through monthly expenditure reports.** Every month expenditure reports are prepared by public institutions (universities, TVET institutions, and colleges), which are then submitted to the UGC, DTE, and DSHE, respectively. Private institutions submit their monthly expenditure reports to their boards. However, the Public Financial Management (PFM) Performance Report acknowledges the existence of weaknesses in the revenue and expenditure controls and in reporting and accountability mechanisms. A number of PFM reforms were initiated by the Deepening Medium-Term Budget Framework and Strengthening Financial Accountability Project, which closed in 2014. Building on the reforms under the PFM project, an Integrated Budgeting and Accounting System (iBAS++) is currently being rolled out and when fully implemented, it should strengthen many internal control procedures and address some of the weaknesses in accounting and recording in TEIs as well.

#### **7.2.4. Institution-wise income generation and revenue opportunities are limited**

**138. First, there is no clear-cut policy or mechanism to support income-generation activities by TEIs in Bangladesh.** Interviews with stakeholders revealed some confusion and conflicting views among them about policy frameworks for such income-generating activities by public TEIs. According to the government officials, public TEIs are permitted to operate income-generating activities at their own will. However, the public TEIs on their part lament the lack of clarity about their authority and unclear guidance from the government. There is no evidence in the form of formal communication from the government to the institutions, granting authority to generate income internally. Such confusion and unclarity about authority and requirements have precluded systematic income-generating activities by TEIs.

**139. As a consequence, the main income source for most public TEIs, other than grant funding from the**

**government, is fees charged to students in the form of registration, tuition, and examination fees.** The amount of tuition fees charged in public TEIs are set by the government and collected by institution. However, the tuition levels have traditionally been very low. For example, the average tuition fees per student in public universities in 2012 was around US\$130 though tuition fees have been increasing over time in public universities. The tuition fees charged by private universities are on average more than five times that of public universities (Boye and Mannan 2014). Private universities operate almost entirely relying on fees collected from students and other private incomes.

**140. Despite the lack of authority and regulatory framework regarding the operation of income-generating activities, some of the public TEIs do run a range of revenue-generating ventures.** Large and well-established public TEIs are operating various income-generating activities, including renting out some of their own properties such as buildings and land. They also earn from providing consulting services both institutionally and individually. Smaller and less well-established institutions on their part seem to be lacking the capacity to raise revenues internally. The revenues of the public universities are disclosed in their respective budget books which also show the sources of the earnings, including the government grants.

**141. Private institutions have latitude of exploring various avenues for revenue generation.** Similar to public institutions, the main source of funding in private institutions is from tuition and other fees charged to students. Unlike in public institutions, where government regulates the level of fees charged to students, the level of these fees varies from one private institution to another. It is worth pointing out that, some institutions are part of a business venture group, which helps in raising funds for the institution. In addition, private institutions accept donations from individuals and organizations to augment their fundraising capacity, which is not the case with public institutions. Such contributions, however, are often irregular and available only to a small number of private institutions, mostly in urban and semi-urban areas. Generally, due to fear of disclosure, it is difficult to ascertain exactly what activities private TEIs operate.

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<sup>65</sup> Primary education in Bangladesh has been using PBF, which was implemented under the Bangladesh Third Primary Education Sector Development Project. The project is supported by 10 development partners, including the World Bank and ADB, with clearly defined disbursement-linked indicators, which need to be met for the development partners to release funds tied to that particular component.

**142. Internationally, income diversification strategy has been favorably advocated for TEIs** to enhance financial sustainability and greater resource mobilization for investment in equity and quality improvement. According to existing literature,<sup>66</sup> success in income diversification among TEIs is dependent on three broad factors: (a) having a flat management structure,<sup>67</sup> (b) having an

entrepreneurial attitude, and (c) having an outward-looking mindset. A prerequisite to fostering income diversification among TEIs is granting sufficient autonomy to institutions, especially financial autonomy.<sup>68</sup> Some of the international examples of income-generating ventures operated in tertiary education are illustrated in Box 9.

## BOX 9

### Institution-wise Income-Generating Activities Operating Internationally

- (a) Contracts with private partners for both research and teaching
- (b) Philanthropy from alumni, charities, and foundations
- (c) Institution-based services/products such as renting out institution facilities/property and selling products/services produced internally (case for TVET institutions)
- (d) Structured partnerships with business entities, especially large companies
- (e) Internationalization of student admissions, thus attracting international students
- (f) Increasing the share of funding coming from households/students in the form of fees

## 7.3. POLICY OPTIONS FOR BETTER FINANCING IN TERTIARY EDUCATION

### **143. Exploring performance-based approach to financing TEIs, especially for the university sector.**

The GoB should explore options to include performance-based approach in the financing of TEIs, given its success in areas such as Europe, Australia, and North America. Performance-based allocations could be used in conjunction with the existing traditional budgeting system. Institutions may continue to receive much of their budget through a guaranteed budgetary allocation to ensure funding for their operation while receiving a smaller share of their budget through the performance-based budget allocation which may fluctuate depending on their performance and other conditions. The approach would avoid putting poor performers at significant disadvantage and could effectively incentivize the core principles of accountability in the utilization of financial resources toward achievement of development objectives

of institutions and the overall sector. One of the key challenges under the performance-based financing modality is formulating and agreeing upon clear and smart criteria of desired outcomes.

**144. Granting a clear authority to TEIs with adequate transparency measures to facilitate greater income-generating activities.** Autonomy, especially financial autonomy, allows TEIs in Bangladesh to operate income-generating activities and explore innovative approaches to financing their institutional development plans. The authority of institutions for undertaking income-generation activities needs to be better clarified, in the form of a written framework and guidelines on the extent of the authority of institutions and responsibilities of institutions for transparency about such activities.

<sup>66</sup> [http://www.eua.be/Libraries/publications-homepage-list/Financially\\_Sustainable\\_Universities\\_II\\_-\\_European\\_universities\\_diversifying\\_income\\_streams.pdf?sfvrsn=2](http://www.eua.be/Libraries/publications-homepage-list/Financially_Sustainable_Universities_II_-_European_universities_diversifying_income_streams.pdf?sfvrsn=2)

<sup>67</sup> A flat management structure requires a relatively small number of layers in the institution's chart, with the exact number of personnel varying across institutions, depending on size and complexity of the institution.

<sup>68</sup> [http://www.eua.be/Libraries/newsletter/EUDIS\\_Conference\\_report.pdf?sfvrsn=0](http://www.eua.be/Libraries/newsletter/EUDIS_Conference_report.pdf?sfvrsn=0)

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# ANNEX

## ANNEX 1

### INSTITUTIONAL GOVERNANCE AND MANAGEMENT IN TERTIARY EDUCATION

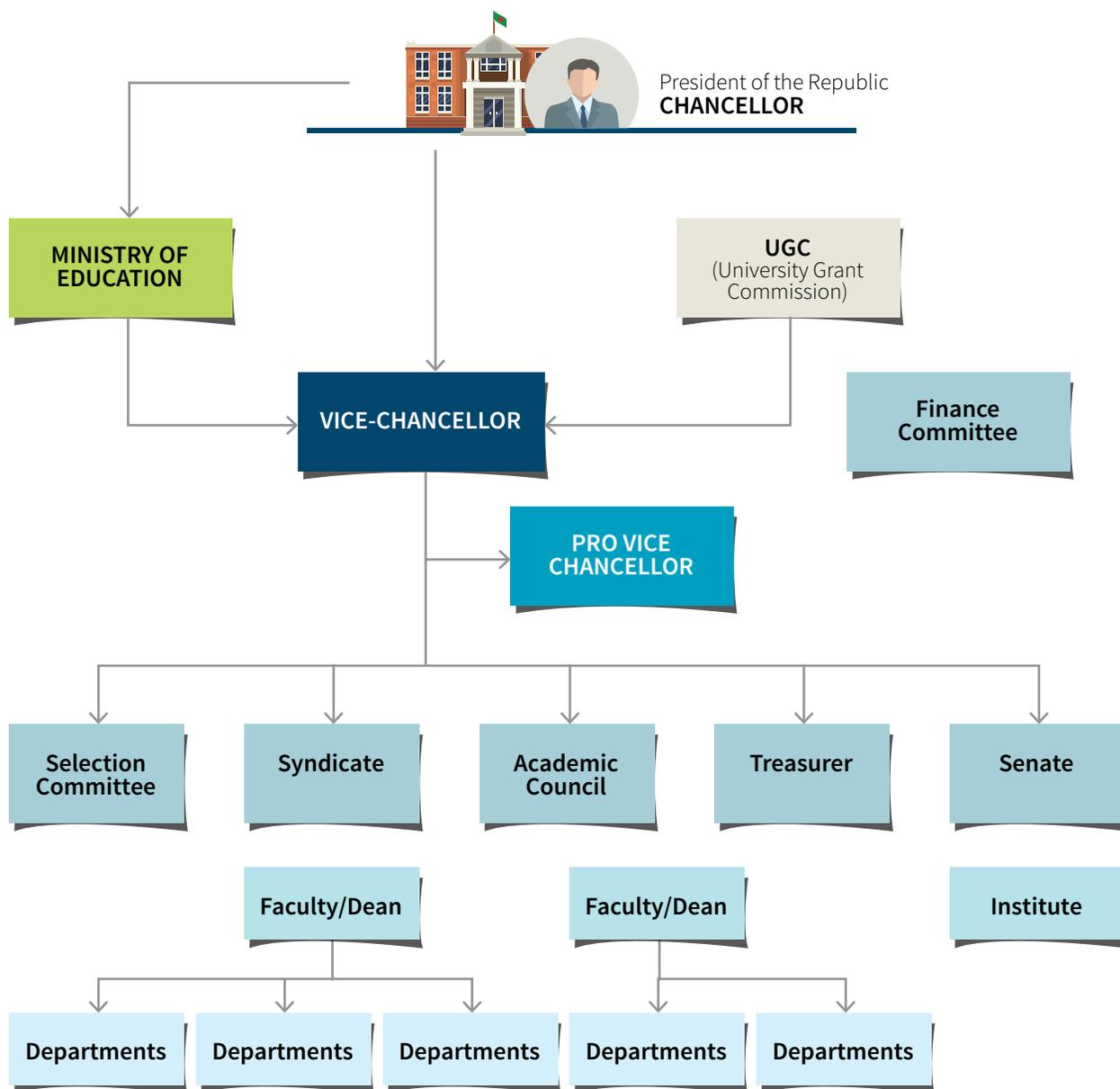
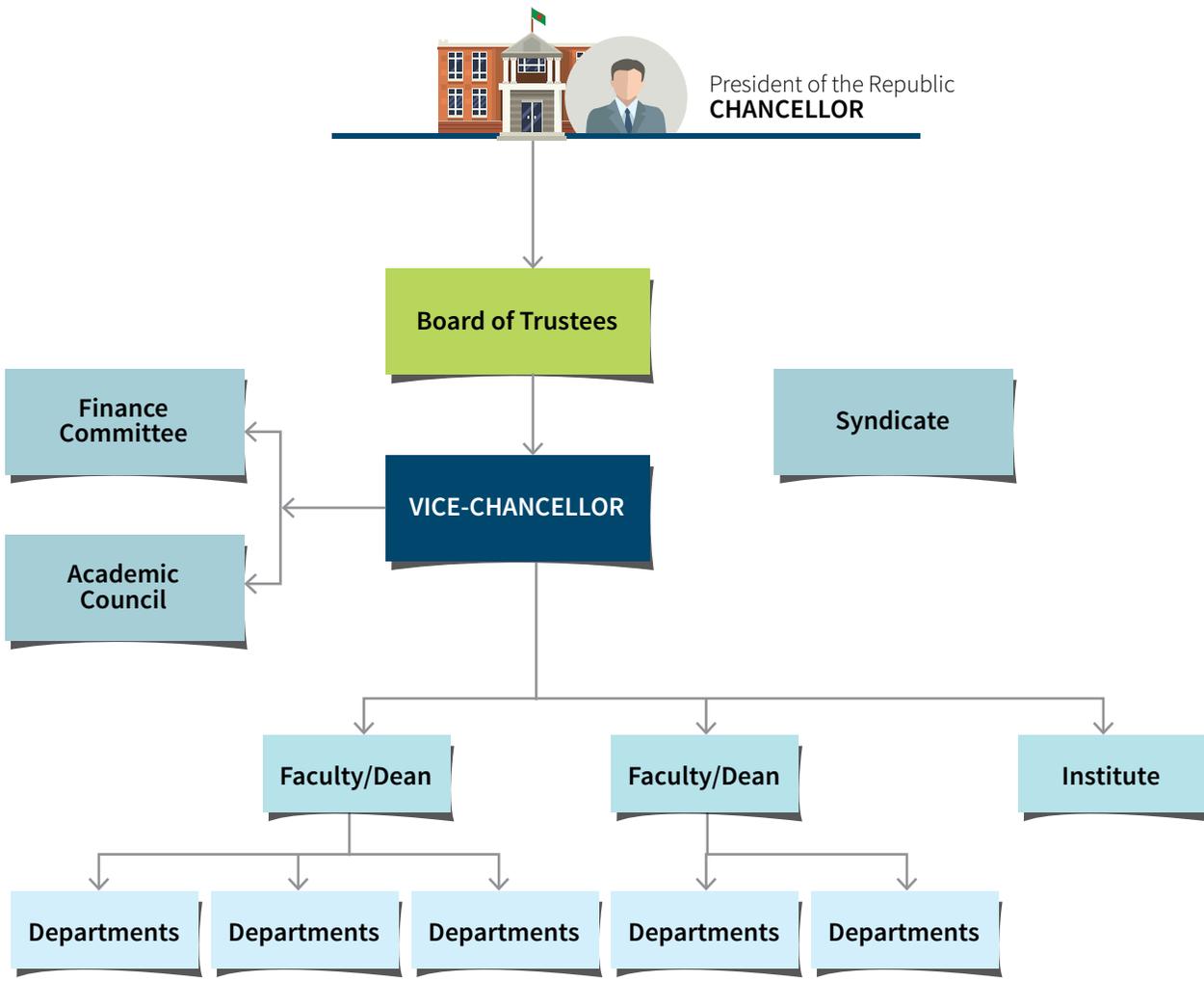


Figure 1.1: Public University Organogram



**Figure 1.2:** Private University Organogram

## ANNEX 2

# POLICIES AND STRATEGIES FOR TERTIARY EDUCATION

1. There are four key government policies that guide development priorities and strategies at the tertiary-level education in Bangladesh: (a) Seventh FYP FY2016–FY2020, (b) National Education Policy (NEP 2010), (c) Strategic Plan for Higher Education in Bangladesh (2006–2026), and (d) National Skills Development Policy (NSDP 2011). Here are the brief illustrations of the propositions of the above policies with respect to the study’s five thematic areas in the context of tertiary education: (a) quality and relevance, (b) research and innovation, (c) access and equity, (d) management and governance, and (e) financing.

### QUALITY AND RELEVANCE

2. One of the key priorities for Bangladesh’s skills development agenda is to improve the quality and relevance of education to fill the skills gap in the labor market and realize more and better employment for youth. To address this, the Seventh FYP advocates for **diversification of technical education programs**, including ICT, and **modernization of skills training institutions**. The NEP calls for urgent **adjustment of education and skills qualifications with the labor market demands** and requires **skills demand surveys** to be conducted. In higher education, the NEP calls for **stringent application of minimum certification standards** for higher education institutions and demands **curricula of the international standards** at higher education institutions. It draws special attention to the urgent needs of **training/retraining teachers of universities and colleges** for pedagogical and subject-based knowledge. The Strategic Plan for Higher Education in Bangladesh emphasizes upon creating **the culture of teaching quality** at higher education institutions and promoting **merit-based recruitment, continuous faculty development**, and more relevant academic contents. It also prioritizes the establishment of the **national framework for quality assurance and accreditation**. In TVET, the NEP strongly calls for **regular revisions of TVET curriculum** in view of job markets at home and abroad and emphasizes on **filling teacher vacancies** and in-service hands-on **teacher training at industries**. The NSDP (2011) sets **demand-driven, flexible, and responsive TVET** at its core and sets out a number of strategies toward that goal. It places particular importance on upgrading the **competency-based skills qualifications and recognition system**—National Technical and Vocational Qualifications Framework (NTVQF)—and advocates for **greater involvement of the private sector** in standard setting and training provision. It also highlights the criticality of having accurate **skills and labor market information system** in planning appropriate skills development strategies.

## RESEARCH AND INNOVATION

3. The Seventh FYP highlights teaching and research as being the main functions of universities. The GoB prioritizes infrastructural development including libraries and laboratories and procurement of scientific equipment. To foster science and research education, the government is investing in establishing new science and technology universities and creating interest among the young generation to study science and technology, especially ICT education. The NEP lends support in this direction. It encourages teachers and students of tertiary education institutions to take part in research activities and promises **adequate research funding** to capable researchers to undertake original researches and **fellowship grants** for young researchers. Universities are also encouraged to promote institution-based **consultancy activities** among their faculty members to strengthen their research capacities and outreach activities. **Science researches** are particularly encouraged by the NEP to undertake researches to find solutions for the country's problems, and more resource allocation to researches in science is envisaged. Science researchers are expected to establish **collaborative relationships among universities and industrial organizations**. The NEP particularly emphasizes on **engineering research** activities by engineering universities and promotes them as a means to nurture problem-solving skills of students and resolve engineering problems of local industries. **Medical research** has also been identified as an important area for improving the health care services and the government has decided to establish new medical universities outside Dhaka for promoting and expanding the territory of advanced medical research. Importance of **access to online knowledge resources** such as journals through information technologies is also highlighted as a way to share and access research results. Research activities are not confined to universities. The NEP also encourages **tertiary-level colleges to engage in research activities**. The Strategic Plan for Higher Education in Bangladesh views research and development as an integral part of modern economic planning both by government and private industry. A **closer relationship between industry and university** must be established so that research carried out in the universities is geared to the needs of the industry and the country.

## ACCESS AND EQUITY

4. Bangladesh has made significant progress in providing equitable access to primary and secondary education during the past decades. However, there are still challenges regarding access and equity to postsecondary education, especially among socioeconomically disadvantaged groups and females. The NEP envisions provisions of **special stipends** and interest-free/low-interest student loans to poor and meritorious female students to pursue higher education. The banking sector is expected to be persuaded to arrange soft **student loans** for higher education students. It also stipulates **merit-based scholarships** for high-performers of the HSC examination. The NSDP calls for improvement of access to skills development to under-represented groups, including the less educated, women, and people with disabilities. It makes provisions for several measures for equity, including setting up microcredit **schemes for poor** trainees, removal of Grade 8 prerequisite from formal courses, expansion of **female-oriented training courses**, **awareness raising** to communities, and **provision of incentives**, especially in rural areas. The Strategic Plan for Higher Education in Bangladesh notes the government's concerted efforts toward equal opportunity of access to quality higher education and gender parity and equity, which are being vigorously pursued.

## MANAGEMENT AND GOVERNANCE

5. Governance and management of the sector and of public and private institutions need to be improved to meet the growing demand while at the same time ensuring the quality and relevance of tertiary education in Bangladesh. The NEP advocates for several strategies to promote accountable, dynamic, transparent, and corruption-free administration of postsecondary education. For overall education sector, it envisions the enactment of the **Education Law** to ensure proper implementation of the NEP and formation of autonomous statutory **Higher Education Commission** as an advisory body to education agencies. It also calls for establishment of **new teacher selection commission** for nongovernment institutions and advocates for **merit-based competitive promotion** process for nongovernment teachers. In higher education, the NEP demands the establishment and strengthening of the **BAC** to accredit the study programs in universities and to

examine and evaluate performance of both public and private universities against the National Qualifications Framework currently being formulated by the UGC. The NEP recognizes that **the UGC** is the body that coordinates and leads matters of higher education in the country. It highlights the need to resolve inconsistencies of roles between universities and the UGC and calls for revision of the UGC Act and further strengthening of the UGC. For tertiary colleges, it puts the **National University** at the center of administration and strongly calls for decentralization of the National University functions at the divisional level. **Autonomy is seen as a must** for higher education institutions, provided that a proper monitoring and accountability system of government on use of funds is in place. In TVET, the NSDP supports the strengthening of **partnerships with the private sector**, especially through **Industrial Skills Councils**, so they increase their role in the governance and delivery of skills training. The **National Skills Development Council** (known as NSDC), a tripartite forum with representatives from the government, employers, and workers, is in charge of overseeing all activities of public and private TVET providers and coordinating with all the stakeholders in the skills development. It calls for further **strengthening of the BTEB** to assume quality assurance and regulatory responsibilities, including establishment of a national qualification framework. To further strengthen the skills development sector, the government has launched a **National Skills Development Authority** (NSDA) to be responsible for overall coordination, for which an Act is being drafted, and the **National Human Resource Development Fund** (NHRDF) to mobilize additional and reliable resources (the Seventh FYP).

## FINANCING

6. One of the education policy priority areas emphasized in the education sector review report is the provision of adequate funding for education. In the context of postsecondary education, in addition to the increased allocations to the sector, the focus should be on the **diversification of financing sources** to ensure effective mobilization of the necessary funds. **Private financing and private provision of skills training**, supported by public financing, can be one of the main providers of various TVET programs (the Seventh FYP). The NEP calls for government budget to be allocated on priority basis in the sector of vocational and technical education. Particularly in the TVET sector, considerable emphasis is placed on private provision of trainings with the governance and financial supports from public sector. Private entities are strongly encouraged to establish new training institutions in partnership with the government. Consistent with the above, the NSDP policy mentions that necessary steps should be taken to ensure that additional financing options, including microcredit, are available for both students and training providers, to increase both the scope and amount of skills training. In higher education, the Strategic Plan for Higher Education in Bangladesh acknowledges the importance of government contribution; however, it is on the decline and this trend needs to be reversed. Universities are expected to be actively engaged in **institutional-level and individual-level resource generation** to meet expenditures for education and research (the NEP). The NEP hinted that tuitions and fees of universities will be determined according to the financial capacity of parents so that universities will be able to make greater use of students' fees.

## ANNEX 3

# SECTOR SPECIFIC SKILLS ANALYSIS (MEDICAL EDUCATION SECTOR IN BANGLADESH)

### BACKGROUND

1. **The Bangladesh health sector involves varied levels of skills for service delivery.** Service providers constitute about two-thirds of the health workforce and health management and support workers constitute the remaining third in Bangladesh. Service providers comprise super specialists, specialists and teachers of various specialties, graduate physicians, diploma physicians, nurses, midwives, and medical technologists of different disciplines. Besides mainstream allopath, alternative types of medical care (comprising homeopath, ayurved, and unani) are also in practice and thus requires workforce for those types.

2. **Medical education at the graduate level has expanded significantly over the past two decades, led mostly by private sector expansion.** Private medical institutions are nearly double the number, accounting for almost two-thirds of medical seats. Among prospective medical students, strong preference remains for enrollment in the government medical colleges due to less cost, perceived higher quality of education, and good reputation associated in comparison to the private colleges. Nonetheless, near 100 percent enrollments across medical seats—regardless of public or private institutions—are seen each year, indicating high demand for medical education among higher secondary school graduates in Bangladesh.

3. **Gender parity has favored female enrollments in medical colleges in recent years.** The medical colleges, including dental education, especially in the government, have seen a good rise in the participation of females. In the early 1990s, less than 30 percent of government medical college graduates were females, which rose to 53 percent as of 2015. Specifically, 62 percent of graduating doctors from government dental medical colleges are female. However, transition to practicing doctors among female medical college graduates remains a concern. Studies have shown that sociocultural factors, such as marriage and child bearing, often lead to female doctors' discontinuing their practice and higher education.

**Table 3.1:** Number of Medical Colleges and Seat Intake Capacity, by Provider Type

	Total Number of Medical Colleges	Private Share (%)	MBBS seats in Government Medical Colleges	Private Share (%)
1992	13	0	1,450	0
1996	18	28	1,650	12
2006	40	65	3,396	52
2011	77	70	7,285	59
2016	104	65	9,957	62

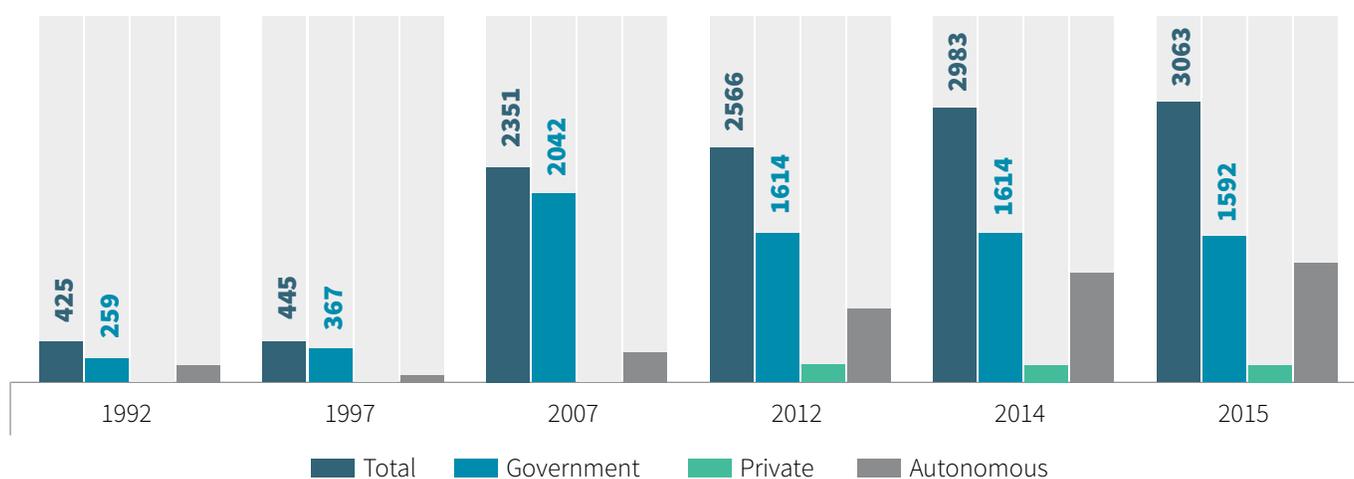
*Source:* ADirectorate General of Health Services (DGHS), MIS various years.

**4. Postgraduate education,<sup>69</sup> which leads to specialization in the medical field, is predominantly public led in Bangladesh.** The enrollment capacity of the sector for postgraduate studies has increased sevenfold between 1992 and 2015 (Figure 3.1). Most of the increase in enrollment capacity has been from the expansion of the public sector. Out of 34 organizations, the 22 government organizations affiliated with the public universities account for 51 percent of seats in postgraduate medical programs. Enrollment capacity in the private medical organizations has remained stagnant—only 10 private providers with less than 200 seats have been involved in the delivery of postgraduate medical programs since 2012.

5. Despite the improvement in enrollment capacities, graduate and specialist medical physician skills are in short supply in terms of the demand, especially in rural areas. Annually, Bangladesh produces 3,000 specialist and super specialist physicians, which is way below what is needed, especially in certain disciplines. For example, shortage of anesthesiologists is considered to be one of the key reasons for the reduction of comprehensive emergency obstetrics care services at government upazila health complexes. Another area where skilled physicians are in shortage are dental surgeons—in 2016, Bangladesh had seats for 1,917 dental surgeons from 34 government and private dental colleges. The shortage of skilled

medical professionals is more prominent in rural areas due to quality-of-life issues and high turnover rates in remote and rural areas (Rose, Lane, and Rahman 2014). Doctors and nurses often refrain from postings in remote areas, due to challenging living and working conditions (Rose, Lane, and Rahman 2014). Higher-level doctors are often deployed for shorter periods—on average a year, indicating that doctors remain in remote area posts for less time (FMRP 2005).

**6. Nursing and allied skills are also deemed to be in huge shortage.** A Grade 12 graduate can generally enroll in the four-year B.Sc. in Nursing or a three-year Diploma in Nursing and Midwifery. Diploma in Nursing (and Midwifery) completion is the entry qualification for Post-Basic B.Sc. in Nursing, which is a two-year program. For effective skill mix, internationally recommended doctor-nurse ratio should be 1:3. Because Bangladesh has registered physicians as 4.90 per 10,000 population (MIS 2016), nurses should have been 14.7 per 10,000 population. However, there are only 2.90 registered nurses per 10,000 population in Bangladesh (MIS 2016). Government hospitals' vacancy posts average around 22 percent with some remote districts reporting vacancy rates as high as 70 percent (MIS, 2014). Thus, a huge shortage of nurses remains in Bangladesh, especially in rural and remote areas.



**Figure 3.1:** Number of Available Seats across Postgraduate Organizations, by Type

Source: DGHS, MIS various years.

<sup>69</sup> Postgraduate qualifications are offered by two bodies—Bangladesh College of Physicians and Surgeons (BCPS), which offers Member of College of Physicians and Surgeons (MCPS) and Fellow of College of Physicians and Surgeons (FCPS), and Bangabandhu Sheikh Mujib Medical University (BSMMU), whose offers vary from diploma to master's (Masters in Surgery - MS, Masters in Public Health - MPH, Masters in Medical Education - MMEd, and so on) to Doctor in Medicine - MD. Depending upon the postgraduate qualification, usually one to five years are required after graduation and internship.

**Table 3.2:** Graduate Nurse Production Capacity over Years

Year	Post-Basic B.Sc. in Nursing Course						Basic B.Sc. in Nursing Course					
	No. of Institutions			No. of Seats			No. of Institutions			No. of Seats		
	Govt	Pvt	Total	Govt	Pvt	Total	Govt	Pvt	Total	Govt	Pvt	Total
2011	4	9	13	500	270	770	9	8	17	775	230	1,005
2017	4	37	41	400	1,475	1,875	14	45	59	1,035	2,185	3,220

*Source:* DGHS, MIS various years.  
*Note:* Govt = Government; Pvt = Private.

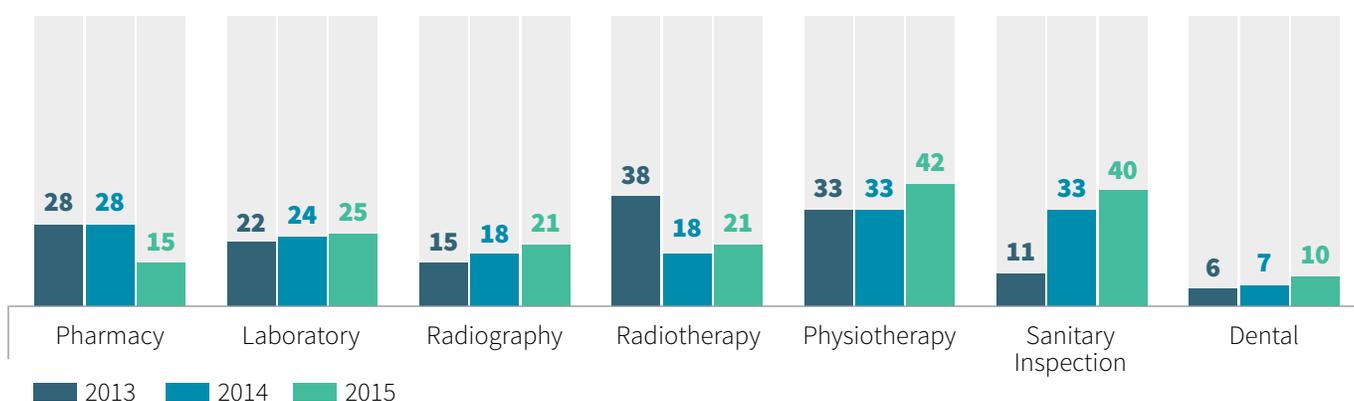
**7. Participation in nursing programs is also likely to be influenced by sociocultural challenges.** Between 2011 and 2017, seating capacity for undergraduate nursing and post-basic nursing increased considerably (Table 3.2). However, Bangladesh Nursing and Midwifery Council (BNMC) had registered 2,436 B.Sc. in Nursing and 4,436 Post-basic B.Sc. in Nursing (including 814 post-basic B.Sc. in Public Health Nursing), which is lower than the total capacity intake across the sector. This indicates that there may be demand-related issues to producing adequate nursing skills in the country.

**8. Medical technologist are key health support staff supplied by institutions under both the health and education ministries.** Medical technologists are responsible for technical jobs under the supervision of medical experts. Different disciplines include laboratory, radiology, physiotherapy, sanitary inspection, dentistry, pharmacy, radiotherapy, occupational therapy, speech therapy, optometrist, refraction, ophthalmic assistant, and cath-lab technician. Courses include certificate, diploma, bachelor, and master’s degrees. In addition to public and private institutions under the health

ministries, the BTEB also offers diploma (three-year) and certificate (one-year) programs in health technology across various disciplines like laboratory, radiology, pharma, physiotherapy, dental, medical, patient care, and integrated medical (Sabur and Huque 2016). Entry qualification is Secondary School Certificate (Grade 10) pass. Despite the different skills providers, vacancies of medical technologists in government health services are a regular phenomenon (Figure 3.2).

**KEY CHALLENGES TO SKILLS PROVISION IN MEDICAL AND ALLIED SERVICES**

**9. Need for coordination between different medical skills providing entities.** Institutions offering postgraduate courses need to coordinate and streamline their programs because of concerns of pluralistic qualifications with different equivalencies across some disciplines. On the other hand, the BTEB under the MoE is also conducting medical technology and nursing courses without coordination with other skills providing institutions in the health sector. There



**Figure 3.2:** Vacancy Rate across Government Sanctioned Positions for Various Medical Technologists

*Source:* DGHS, MIS various years.

are also discrepancies in the examination system and professional accreditation by the BNMC, State Medical Faculty, Pharmacy Council of Bangladesh, Bangladesh Homeopathic Board, and Bangladesh Board of Unani and Ayurvedic Systems of Medicine, which likely leads to varied levels in the quality of education and skills development.

**10. Lack of modern teaching-learning facilities in the medical education institutions.** The quality of medical education is affected adversely due to underdeveloped teaching-learning facilities, including access to labs and instruments, medical research journals, and high-speed Internet connectivity, which are important inputs for a conducive learning environment.

**11. A chronic dearth of qualified teachers undermines teaching strength in medical education institutions.** Adequate skilled teachers are one major challenge to increasing the capacity of the sector in producing the needed skills. Only postgraduate qualification holders are considered in Bangladesh as specialist and super specialist physicians and can be recruited as teachers in the medical universities, colleges, and other medical institutions. For example, the DGHS reports around 215 (35 percent) posts of professors, 214 (23 percent) posts of associate professors, 327 (23 percent) posts of assistant professors, 214 (40 percent) posts of senior consultants, and 1,837 (50 percent) posts of junior consultants were vacant as of 2016.

**12. A culture of research is still underdeveloped in the medical education sector in Bangladesh.** One of the criteria and standards of Bangladesh Medical and Dental Council (BMDC) for recognizing medical colleges requires each medical college to establish a research cell with adequate provision of various national and international literatures and computer facilities to support medical research and innovation (BMDC 2009). However, most medical colleges do not have research cells—a study finds that only in 3 out of 13 medical colleges established such cell (Abdullah and Sabur 2016).

## POLICY OPTIONS

**13. Improve coordination among the different medical skills providing entities.** As suggested in the Fourth Health Population and Nutrition Health Sector Program (HPNSP) 2017–2022, the postgraduate institutions (BCPS and BSMMU) need to coordinate and delineate their roles and streamline their programs to avoid confusion among people and duplication and wastage of resources. The roles of other entities, including the BTEB, need to be reviewed and aligned with the needs of the sector.

**14. Increasing teaching strength** at the medical colleges/institutions and universities through creation of teaching posts and opportunities for research and professional development of teachers. A human resource assessment in medical teaching is warranted to determine the needs of the sector for planning and policy purposes.

**15. Upgrading teaching-learning facilities in the medical colleges**—using competitive funds based on institutional development plans to upgrade facilities. Generation of additional funds through research and development work may be explored through funds allocated to promote collaborative research with medical industry sectors.

**16. Establishment of medical universities.** The Government has established three medical universities and plans to set up another. With the medical universities in place, the past/current affiliation of the medical colleges with the general public universities will be discontinued. However, not all medical universities have developed capacities, including physical facilities. Thus, a transitional plan would be necessary.

**17. A strategic plan for medical education is needed.** Since the population-physician ratio in Bangladesh has crossed the minimum recommended threshold (4.9 against 2.5) but is very low for nurse, midwife, technologists, and other para-professionals, expansion of medical and nursing education and training institutions is a high priority. A strategic plan which provides consensus-based actions and guidelines for the development of the medical education sector based on skills needs over the short to medium and long term is warranted.

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## **LIST OF GOVERNMENT ORGANIZATIONS OFFERING POSTGRADUATE MEDICAL QUALIFICATIONS**

1. Centre for Medical Education, Dhaka
2. Chittagong Medical College
3. Dhaka Dental College
4. Dhaka Medical College
5. Institute of Child and Mother Health, Dhaka
6. Institute of Nuclear Medicine and Ultrasound, Dhaka
7. Mymensingh Medical College
8. National Institute of Cancer Research and Hospital, Dhaka
9. National Institute of Cardiovascular Diseases, Dhaka
10. National Institute of Chest Diseases and Hospital, Dhaka
11. National Institute of Child Health, Dhaka
12. National Institute of Kidney Diseases and Urology, Dhaka
13. National Institute of Mental Health, Dhaka
14. National Institute of Ophthalmology, Dhaka
15. National Institute of Preventive and Social Medicine, Dhaka
16. National Institute of Traumatology and Orthopedic Rehabilitation, Dhaka
17. Rajshahi Medical College
18. Rangpur Medical College
19. Shahid Ziaur Rahman Medical College, Bogra
20. Sher-e-Bangla Medical College, Barisal
21. Sir Salimullah Medical College, Dhaka
22. MAG Osmani Medical College, Sylhet

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