



Ministry of Education

Government of the People's Republic of Bangladesh

MASTER PLAN FOR ICT IN EDUCATION IN BANGLADESH (2012-2021)

—
PROGRESS REVIEW REPORT
2019



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The Ministry of Education acknowledges the valuable contributions of the Progress Review Team which conducted the Progress Review, provided guidance, coordination and expertise throughout the Review Process.

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Cultural Organization





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MESSAGE



Dr. Dipu Moni, MP
Minister
Ministry of Education,
Govt. of the People's Republic of Bangladesh

Bangladesh is preparing to celebrate the Golden Jubilee of Independence in 2021. The Government has pledged with its election manifesto "Vision 2021" to build a Digital Bangladesh by the year 2021. In order to achieve the goals and targets of our Vision 2021, and to build a country whose citizens are able to live prosperous and happy lives, there is no option other than transforming our society into a knowledge society.

The Ministry of Education plays a significant role in pursuing this transformation and achieving the vision of building a Digital Bangladesh by 2021. Leveraging Information and Communication Technologies (ICT) to achieve this transformation by enhancing the quality of education and by making learning more relevant and more accessible through technology, the Ministry of Education formulated the *Master Plan for ICT in Education in Bangladesh (2012-2021)* in 2012 with support from UNESCO and in cooperation with concerned officials from the Ministry of Primary and Mass Education, the A2I Programme and other relevant agencies. The comprehensive review of the *Master Plan for ICT in Education (2012-2021)* in 2018 was an important initiative to review progress in the implementation of the Master Plan and to make adjustments where necessary ensuring that learners of all ages and socio-economic status are not only a part of, but are enabled to actively contribute to Bangladesh becoming a knowledge society. The review further ensured that the Master Plan is aligned with and contributes to the achievement of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals.

My cordial appreciation goes to all who have been working collectively and cooperatively to review the Master Plan as well as to all who are implementing the Master Plan through their everyday work, bringing Bangladesh closer to our dream of becoming a knowledge society by 2021 and an upper middle-income country by 2041.

Joy Bangla, Joy Bangabandhu
May Bangladesh live forever.

Dr. Dipu Moni, MP
Minister



MESSAGE



Mohibul Hassan Chowdhury, MP
Deputy Minister
Ministry of Education,
Govt. of the People's Republic of Bangladesh

Our Father of the Nation, Bangabandhu's dream was to build an educated and hunger free Bangladesh. Under the leadership of his daughter, our Prime Minister Sheikh Hasina, we are on track to achieving the dream of our father. In pursuit of achieving the Government's Vision 2021 "Digital Bangladesh", the Ministry of Education developed a comprehensive Master Plan for ICT in Education in Bangladesh (2012-2021) in 2012.

The Master Plan for ICT in Education aims to reduce the 'digital divide' that leads to inequalities in the access to and use of Information and Communication Technologies (ICTs) in the education sector, as well as aims to leverage ICT as an enabling and cost-effective tool to enhance the quality of education in Bangladesh.

In order to track implementation progress and to coordinate actions among different implementing stakeholders of the Master Plan within the education sector, as well as to ensure its continuing relevance, the Master Plan has been reviewed and progress has been measured through a comprehensive review exercise in 2018.

I would like to express my sincere appreciation to all members of the review team who have effortlessly contributed to the comprehensive review as well as my sincere acknowledgments to the Ministry of Education for its strong leadership throughout the review process.

I am confident that the findings of the review will provide important guidance for remaining three years of implementation of the Master Plan, as well as provide valuable insights for the formulation of the forthcoming Master Plan for ICT in Education in the very near future.

Mohibul Hassan Chowdhury, MP
Deputy Minister



MESSAGE



Mr. Md. Sohorab Hossain
Senior Secretary
Secondary and Higher Education Division,
Ministry of Education,
Govt. of the People's Republic of Bangladesh

The Ministry of Education, with assistance from the UNESCO Office in Dhaka, prepared the Master Plan for ICT in Education in Bangladesh (2012-2021) in 2012. The Master Plan provides a roadmap for transforming Bangladesh's education system into a quality education system that is fully leveraging information and communication technologies to enhance access to and quality of education in all parts of Bangladesh in pursuit of attaining the national Vision 2021.

The Master Plan provides concrete steps to leverage ICT in the education sector in order to provide access to quality education for all, to improve the overall quality of education, to produce an ICT skilled teaching force, and to reduce the educational gaps between urban and rural areas through the use of ICT in teaching. Leveraging ICT in education enhances learning possibilities by making education more accessible, by providing updated and interactive learning materials, as well as by allowing learners to upgrade their professional skills and improving their ability to adapt to new technologies.

The Ministry of Education has been restructured over the past years and two Divisions and as well as one new Directorate have been formed. Following the restructuring of the Ministry, new roles and responsibilities of the different divisions and directorates need to be reflected in the Master Plan.

While not all concerned officials of relevant Government agencies are fully aware of the Master Plan, the first six years of implementation of the Master Plan have been a great success. A large number of Government agencies are implementing different activities of the Master Plan, including in pursuit of the goals and targets of SDG 4.

To ensure continued progress in the implementation, as well as to ensure continued relevance, it is important to review and to assess implementation progress of the Master Plan every three years. When developing the Master Plan, the two lead ministries generously offered to take appropriate steps and measures to conduct the review and to make any necessary amendments or revisions necessary to ensure its relevance. Generously the Ministry of Information and Communication Technology offered their cooperation in the monitoring and implementation of the Master Plan.

The UNESCO Office in Dhaka supported the Ministry of Education to conduct a first comprehensive review of the Master Plan in 2018. A Review Team, convened by the Additional Secretary (Admin and Finance) of the Secondary and Higher Education Division, has reviewed progress in the implementation of the Master Plan which are presented in this Review Report.

I would like to thank everyone involved in the review of the Master Plan and kindly seek their continued efforts to support the preparation of the next Master Plan for ICT Education in Bangladesh as soon as possible.

স্বাক্ষরিত ০১-০৭-২০১৭

Mr. Md. Sohorab Hossain
Senior Secretary



MESSAGE



Dr. Aruna Biswas
Convener of Review Team and Additional Secretary
(Admin & Finance), Ministry of Education
Govt. of the People's Republic of Bangladesh

In 2012, under leadership of the Minister and with assistance from UNESCO, the Ministry of Education formulated the Master Plan for ICT in Education in Bangladesh (2012-2021). The Master Plan includes an actionable intervention framework with objectives and activities outlined for the two main implementing Government agencies, the Ministry of Education and the Ministry of Primary and Mass Education.

The Master Plan stipulates in its Preamble to be reviewed every three years with measures being taken to make necessary amendments and revisions of the Master Plan. It suggests that on the basis of regular progress reviews, concerned ministries and departments are kept informed on progress and can take action if progress stalls.

The comprehensive progress review conducted in 2018, provides detailed insights on implementation progress within the different education sectors and levels. If action is taken, the 'digital divide' that leads to inequalities in access to and use of information technology in educational institutions across Bangladesh can be mitigated.

I hope that the review findings presented in this report are taken into consideration to fulfill the collective commitment of stakeholders to accelerate the pace of implementation and management of the Master Plan in order to ensuring quality education in Bangladesh.

I would like to express my sincere appreciation to all members of the Review Team who have contributed tirelessly to the comprehensive exercise of reviewing progress made and challenges faced in implementing the Master Plan for ICT in Education (2012-2021) since its inception.

Dr. Aruna Biswas
Additional Secretary (Admin & Finance)





MESSAGE



Beatrice Kaldun
Head and Representative
UNESCO Office in Dhaka

Worldwide, Governments and development actors acknowledge the catalytic, enabling, and cost-effective role of Information and Communications Technologies (ICTs) to advance human development in all areas of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).

In the 21st century, ICT skills are an important skill-set that all citizens should acquire to confidently thrive in the globalized, knowledge-based and technology-driven world that we find ourselves in. The Education 2030 Framework for Action highlights ICT as a means to strengthen education systems, to disseminate knowledge, to provide access to information, to enhance the quality and effectiveness of learning, and to provide more effective educational services.

Bangladesh has tremendous potential and has made great strides leveraging ICT to increase access to and improving the quality of education throughout the country. More teachers and education planners and managers are ICT literate than ever before. Those literate not only utilize their ICT skills and knowledge to develop the curriculum and teaching materials, but they transfer their knowledge and skills to their peers and learners.

UNESCO, as a specialized agency of the United Nations in the field of education, has expertise in working with Member States to harness ICT in education in order to provide equitable and inclusive lifelong learning opportunities for all. Across the globe, UNESCO assists Member States in the development and implementation of sector-wide policies and plans to effectively promote the use of ICT in education.

Among other tools, UNESCO has developed global ICT in Education Policy Guidelines. The Guidelines provide specific entry points for Member States to leverage ICT to advance national progress and to achieve the targets of the Education 2030 Framework for Action and SDG 4.

In Bangladesh, UNESCO has been supporting the Ministry of Education for many years including in the formulation of the Master Plan for ICT in Education in Bangladesh (2012-2021) in 2012 as well as in its first comprehensive progress review in 2018. UNESCO's provided support is part of the Organization's global support to Member States in building capacity for education.

With only two years left in the implementation of the current Master Plan for ICT in Education, the conducted progress review not only informs implementing stakeholders on progress made to date and areas that require increased action and attention, but the review also informs forthcoming ICT in Education frameworks and plans in Bangladesh.

I would like to express my sincerest thanks to the entire review team for conducting the review, for consulting stakeholders at various points throughout the process, as well as for producing this comprehensive review report. I hope that the findings and recommendations presented in this report are of value to the Ministry of Education, the Ministry of Primary and Mass Education, as well as all affiliated entities including education institutions, to enhance the development and provision of education services that leverage ICT successfully.

Beatrice Kaldun
Head and Representative

Abbreviations and Acronyms

A2I	Access to Information
BBS	Bangladesh Bureau of Statistics
BCC	Bangladesh Computer Council
BNFE	Bureau of Non-Formal Education
CAMPE	Campaign for Popular Education
CLC	Community Learning Center
CMC	Centre Management Committee
CSO	Civil Society Organisation
DP	Developing Partners
DPE	Directorate of Primary Education
DSHE	Directorate of Secondary and Higher Education
DTE	Directorate of Technical Education
EFA	Education for All
FGD	Focus Group Discussion
GED	General Economics Division
HEQEP	Higher Education Quality Enhancement Project
IBAS	Integrated Budget and Accounting System
ICT	Information and Communication Technology
INFEP	Integrated Non-Formal Education Programme
INGO	International Non-Government Organization
KII	Key Informant Interview
MEB	Madrasah Education Board
MEP	Mass Education Programme
MoE	Ministry of Education
MoP	Ministry of Planning
MoPME	Ministry of Primary and Mass Education
NFE	Non-Formal Education
NGO	Non-Government Organization
PMO	Prime Minister's Office
PoP	Point of Presence
SHED	Secondary and Higher Education Division
TMED	Technical and Madrasah Education Division
UDC	Union Digital Center
UGC	University Grants Commission
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational Scientific and Cultural Organization

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Executive Summary

Information and Communication Technology (ICT) is one of the basic building blocks of modern society with ICT playing an increasingly important role in the way we communicate and the way we learn. Schools worldwide are achieving better education results through the effective use of ICT to complement, to support and, at times, to change the teaching and learning process.

Led by Bangladesh's Vision 2021, commonly referred to as Digital Bangladesh, the Government of Bangladesh continues to place great importance on the application of Information and Communication Technologies (ICT) in all spheres of development. ICT is considered as one of the transformational forces that will transform the country and its people into a technologically-advanced knowledge society.

Education is a key sector to the social and economic transformation of Bangladesh and the Government continues to place great effort in modernizing and revolutionizing Bangladesh's education system through the use of ICT, promoting technology-based teaching and learning as a strategic lever to achieving Bangladesh's Vision 2021. Leveraging ICT in different fields of education, Government stakeholders and educators enhance traditional teaching methods through technology-based teaching, learning tools, and facilities.

To provide an overarching guiding framework for the advancement of ICT in Education in Bangladesh, in 2012-2013, the Ministry of Education (MoE) developed and launched the Master Plan for ICT in Education in Bangladesh (2012 – 2021).

In recent years, the Government of Bangladesh has passed major ICT and Education policies, strategies

and reforms, including the Education Policy 2010, the 7th Five Year Plan, the NFE Act 2014, the Non-Formal Education Policy 2006, as well as the ICT Policy 2015.

UNESCO supports the Government of Bangladesh in the advancement of ICT in Education in pursuit of Bangladesh's Vision 2021, Bangladesh's national development agenda, the international Education 2030 Agenda, as well as the Sustainable Development Goals. As part of its support, UNESCO provides technical assistance to the MoE, which has included the formulation of the Master Plan for ICT in Education (2012 – 2021) in 2012 and 2013, as well as conducting the progress review of the Master Plan in 2018.

Implementing the Master Plan has required consolidated efforts from all development actors. With the overall goal to enhance access to and improve the quality of education in Bangladesh the Government has implemented the Access to Information (A2I) Programme which developed teachers' capacities by providing supplementary digital content tailored for the formal education sector.

In addition, various national and international development actors have developed digital content for vocational skills training with the aim of providing access to quality education for all, including quality education that is relevant to the labor market.



Due to the multitude of stakeholders and efforts taken in pursuit of implementing the Master Plan, it has proven to be challenging to coordinate and to keep track of who is doing what and where. In response, the Ministry of Education has initiated the review of the Master Plan in 2018.

A Review Team has been established, which is formed and convened by the Additional Secretary (Admin and Finance), Secondary and Higher Education Division,

Ministry of Education and with UNESCO providing technical and facilitation support. The review started in August 2018 and gathered information through different data collection tools that had been developed for relevant government agencies. In addition, a desk review of existing literature, key information interviews with Government stakeholders, as well as focus group discussions with teachers and students were conducted.

Key Findings

Findings of the Review of the Master Plan for ICT in Education in Bangladesh (2012-2021) can be summarized as following:

- ◆ Progress has been made in enhancing the teaching and learning environment by using ICT in classrooms (one laptop and one projector per classroom). In addition, a limited number of teaching institutions have been equipped with computer labs. However, more initiatives need to be undertaken to create ICT-enabled teaching-learning environments in all different types of education institutions.
- ◆ Following the restructuring of the Ministry of Education, roles and responsibilities need to be updated and recently formed Divisions and Directorates of the Ministry of Education need to be included in the Master Plan.
- ◆ For the appointment of primary school teachers, to this date, no initiatives have been taken to formally require an ICT degree or ICT diploma as an additional qualification. At the secondary level, an official circular has been issued by the Ministry of Education to recognize professional degrees in ICT.
- ◆ To remain relevant, existing online and offline teaching materials should be updated every three years. Further, awareness raising campaigns shall be initiated to spread information about the digital portal developed as part of the Access to Information (A2I) Programme as well as about the digital content developed by the National Curriculum and Textbook Board (NCTB).
- ◆ More services need to be introduced and public awareness-raising campaigns need to be conducted in order to inform the public about existing ICT-enhanced education services.
- ◆ In order to reach every teacher and student, a larger number of master trainers need to be trained on existing ICT facilities. Further, trained personnel needs to be encouraged to and awarded for knowledge sharing among colleagues.
- ◆ Government officials need be encouraged to and awarded for taking initiatives that leverage ICT to promote transparency, accountability and efficiency.
- ◆ A larger number of initiatives need to be undertaken to provide educational institutions with equal access to ICT resources (i.e. facilities and connectivity) in order to avoid and to minimize the digital divide between urban and rural areas, as well as between secondary, technical and Madrasah institutions.
- ◆ In semi-urban and rural areas, learners and teachers still face strong limitations due to limited infrastructure facilities as well as face due to inadequate Internet connectivity which limits the usage of ICT facilities.
- ◆ Existing ICT facilities are at times not adequately maintained.
- ◆ The training and capacity development of teachers, trainers, curriculum developers, and education managers on ICT in Education needs to be improved as well as included in ongoing capacity building plans.
- ◆ The monitoring and reporting capacity of education managers needs to be strengthened to ensure accountability and transparency on the use of ICT facilities in teaching and learning environments.
- ◆ Despite efforts to raise awareness, not all concerned Government officials are aware of the Master Plan.

About the Report

This Review Report presents findings of the first comprehensive progress review of the Master Plan for ICT in Education in Bangladesh (2012-2021), conducted by a Review Committee with support by UNESCO in 2018.

The Review Report is divided in five chapters.

INTRODUCTION

The Introduction chapter provides an executive summary, which includes key findings and key recommendations, as well as some contextual background on the development and implementation of the Master Plan for ICT in Education.

1

CHAPTER 1: METHODOLOGY

Chapter 1 presents the methodology applied for the review, details specific objectives, presents the review approach, as well as discusses scope and limitations of the review exercise.

2

CHAPTER 2: FINDINGS

Chapter 2 presents specific findings of the review. Chapter 2 is following the structure of the Master Plan: Following a review of the sections of the Preamble of the Master Plan (2.1 – 2.4), the chapter presents review findings for the different levels and sectors of education (2.5), as well as general findings (2.6).

3

CHAPTER 3: CHALLENGES

Chapter 3 presents challenges faced in the implementation of the Master Plan as reported by consulted stakeholders.

4

CHAPTER 4: RECOMMENDATIONS & WAY FORWARD

Chapter 4 presents recommendation and the way forward for future action.

ANNEX

Documents in the Annex include an Progress Overview of Activities under the Master Plan for ICT in Education, a list of stakeholders that were consulted during the Review Process, as well as guidelines which were developed for Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs), which were conducted as part of the Review.



Photo: Directorate of Secondary and Higher Education

Background

In 2009, a workshop that explored prospects of enhancing the capacity of ICT in education and that suggested to prepare a plan for use of ICT in education was organized by the Ministry of Education with assistance from UNESCO. Deliberations made in the workshop underlined the need of coordinated use of ICT in the various fields of education. The workshop recommended to prepare a national Master Plan for ICT in Education, following which a National Planning Committee, chaired by the Minister of Education, and tasked to prepare the Master Plan for ICT in Education, was formed and approved in 2012.

Accordingly, over the course of 2012 and 2013 a Master Plan for ICT in Education for the period 2012 to 2021 was formulated under the leadership of and with full ownership by the Ministry of Education. The Ministry of Primary and Mass Education confirmed contributions to ICT interventions related to primary and mass education, joining forces with the Ministry of Education in implementing the Master Plan hand-in-hand.

When formulating the Master Plan, it was intended that both Ministries jointly review implementation progress every six months and take action if required. It was intended that on the basis of the six-monthly reviews, concerned ministries and departments become aware of progress in implementing the Master Plan – and can take action if necessary.

In addition, it was intended that the Master Plan is reviewed every three years by both lead ministries with measures taken for necessary amendments or revisions. To support the monitoring and implementation of the Master Plan, the Ministry of Information and Communication Technology offered support and cooperation.

The Master Plan was developed with the aim to leverage ICT to enhance the quality of education in connection with attaining the goals and targets of the Millennium Development Goals (MDGs) and Bangladesh's Vision 2021. Following the launch of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) in 2015, a need has emerged to align the Master Plan with the goals and targets of the SDGs, particularly SDG 4.

It is important to note that since the formulation of the Master Plan, the Ministry of Education has been restructured and two separate Divisions (Secondary and Higher Education Division, Technical and Madrasah Education Division) as well as one Directorate (Directorate of Technical Education) have been formed.

UNESCO supports the Government of Bangladesh in the advancement of ICT in Education in Bangladesh. To this end, the UNESCO Office in Dhaka has provided technical assistance to the Ministry of Education in the formulation of the Master Plan in 2012 and 2013. Further, over the course of 2018, UNESCO supported the Ministry of Education in conducting this first comprehensive progress review of the Master Plan, the findings of which are presented in this report. The Review Team was convened by the Additional Secretary (Admin and Finance) of the Secondary and Higher Education Division of the Ministry of Education.



CHAPTER 1

Methodology

Chapter 1 presents the review methodology, presents objectives of the review, details on the review approach, as well as discusses scope and limitations of the review of the Master Plan for ICT in Education 2012-2021.

1 Methodology

1.1 Objectives of the Review

The objectives of the progress review of the Master Plan for ICT in Education (2012-2021) are:

- To identify progress made in implementing the Master Plan during the period January 2012 to June 2018,
- To identify challenges encountered, and
- To propose recommendations for future initiatives.

1.2 Review Approach

The progress review gathered information on the implementation of the Master Plan from a range of sources. A Review Team, which was convened by the Additional Secretary (Admin and Finance) of the Secondary and Higher Education Division of the Ministry of Education, was established as well as a senior consultant recruited to support the review process.

To get the most accurate picture of progress made and challenges encountered in the implementation of the Master Plan, the Review Team opted for a selection of data collection and review approaches.

These included a desk review as well as data collection questionnaires that were developed and disseminated among relevant government agencies. Further, Key Informant Interviews with Government stakeholders (see Annex 2 for a list of interviewees), Focus Group Discussions with Teachers and Students (see Annex 4 for a list of schools consulted), as well as a consultation workshop was conducted with various relevant stakeholders. In addition, different levels of data mining and data analysis were conducted with the collected information.

The following approach and steps were taken in the Progress review of the Master Plan:



1.3 Preparation

Review Team

The Review Team was convened by the Additional Secretary (Admin and Finance) of the Secondary and Higher Education Division of the Ministry of Education and was tasked to conduct the Progress Review of the Master Plan. The scope of work of the Review Team included preparing a work plan for the progress review, development of tools to review and update the existing Master Plan, providing feedback on draft review report, as well as monitoring and coordinating the overall progress review process.

Members of the Review Team included:

- Deputy Secretary (Administration), Secondary and Higher Education Division, Ministry of Education
- Representative, Technical and Madrasah Education Division, Ministry of Education

- Representative, Ministry of Primary and Mass Education
- Representative, University Grants Commission
- Representative, Directorate of Secondary and Higher Education
- Representative, Directorate of Technical Education
- Representative, Directorate of Madrasah Education
- Representative, Directorate of Primary Education
- Representative, Bureau of Non-Formal Education
- Representative, BANBEIS
- Representative, A2I Programme, Prime Minister's Office
- Representative, UNESCO Dhaka Office
- Senior Systems Analyst, Secondary and Higher Education Division, MoE
- Senior Consultant

Desk Review

A desk review was conducted which looked at existing literature and available resources relating to the Master Plan and projects that have been implemented under specific activities of the Master Plan for ICT in Education. Annex 5 provides an overview of literature and other resources that have been reviewed as part of the desk review.

Data Collection Tools

In order to collect quantitative and qualitative data on progress made in implementing the Master Plan from relevant focal agencies, different data collection tools were developed. Besides measuring quantitative progress, developed data collection tools collected qualitative information on challenges encountered by focal agencies as well as recommendation proposed by stakeholders.

The following data collection tools were developed:

1. Structured Data Collection Questionnaire

A structured data collection questionnaire was developed and approved by the Review Team. The questionnaire was disseminated among

relevant implementing agencies and collected implementation feedback for each activity outlined in the Master Plan.

2. Key Informant Interview (KII) Checklist

A semi-structured interview checklist was developed to guide Key Informant Interviews (KIIs) with different agencies including the Ministry of Primary of Mass Education (MoPME) and officials from the Campaign for Popular Education (CAMPE). The checklist included questions on initiatives taken by different agencies to achieve targets within the stipulated time-frame, challenges encountered, and recommendation proposed.

3. Focus Group Discussion (FGD) Guidelines

Focus Group Discussion (FGD) Guidelines were prepared to collect qualitative data during focus group discussions with five different education institutes. Conducted FGDs allowed the Review Team to identify challenges encountered by different educational institutes as well actions that had been taken to overcome them.

1.4 Data Collection

Key Informant Interviews (KIIs)

Key Informant Interviews (KIIs) were conducted with all major stakeholders that have been directly involved in implementing the Master Plan. 12 KIIs were conducted with below list of agencies over the course of 2018 to get in-depth and analytical information from the different stakeholders. KIIs were conducted applying the developed semi-structured KII checklist (see Section 1.3 Preparation).

Key Informant Interview (KII) Stakeholders:

- Access to Information (A2I) Programme;
- Bureau of Non-Formal Education (BNFE)
- Campaign for Popular Education (CAMPE)
- Directorate of Primary Education (DPE)
- Directorate of Secondary and Higher Education (DSHE)
- Directorate of Technical Education (DTE)
- Information and Communication Technology Division
- Madrasah Education Board (MEB)
- Ministry of Primary and Mass Education (MoPME)
- Secondary and Higher Education Division (SHED)
- Technical and Madrasah Education Division (TMED)
- University Grants Commission (UGC)

Focus Group Discussions (FGDs)

Two sets of Focus Group Discussions (FGDs) were conducted: 10 FGDs with teachers and 5 FGDs with students. Focus Groups were selected both from urban and rural areas and developed FGD Guidelines were applied to all FGDs. Conducted FGDs provided in-depth information about progress at the field level as well as about the overall status of expected outcomes of the Master Plan, complementing the data and feedback gathered from conducted KIIs with relevant agencies.

TEACHER Focus Group Discussions: Focus Group Discussions with teachers were held with 5 different groups of teachers of different primary, non-formal, secondary, madrasah and technical education institutes. FGD questions were related to the availability of ICT tools (1) to enhance the teaching-learning environment, (2) to develop teachers' professional and ICT skills, as well as (3) teachers' opinion on whether and how ICT is playing a role in building skilled human resources as well as whether and how ICT is playing a role in ensuring transparency, accountability and efficiency in education management.

Each focus group was asked the same questions but adapted to the context of their relevant sub-sector (i.e. Primary Education, Non-Formal Education, General Education, Madrasah Education and Technical Education).

STUDENT Focus Group Discussions: 5 focus group discussions with each 10-12 students from different education institutes were conducted. Each group was asked questions regarding the use of ICT in their learning environment, the availability of improved learning materials, as well as the accessibility of online education services to them.

Focus Group Discussions were held at the following locations for specific sub-sectors:

Education Sub-Sector	Focus Group Discussion Location
Pre-primary and Primary Education	Sholosohor Primary School, Chittagong
Non-Formal Education	SDI Dhamrai, Manikgonj
General Education at Secondary Level	Meghdubi Adarsha High School, Gazipur
Madrasah Education at Secondary Level	Idris Hawladar Dakhil Madrasah, Shariatpur
Technical Education at Secondary Level	Dhaka Polytechnic Institute, Dhaka

1.5 Data Analysis and Reporting

In order to best analyze the large amount of information and data from the various data sources, all collected data was entered into a database. Before analyzing data points, entered data was cleaned up and a series of quality control measures conducted.

The Review Team then analyzed the distilled data from different data sources and prepared a draft Progress Review Report.

The data was analyzed using the following approach:



1.6 Consultation and Review of Draft Progress Review Report

Following the data analysis and drafting of the Draft Progress Review Report, a Consultation Workshop with key stakeholders was organized by the Secondary and Higher Education Division of the Ministry of Education in November 2018. Honorable Minister of Education, Her Excellency Ms. Dipu Moni participated as Chief Guest, as well as Her Excellency Ms. Beatrice Kaldun, Head and Representative of the UNESCO Office in Dhaka, as Guest of Honor.

During the workshop, the senior consultant presented the findings of the progress review on behalf of the Review Team. Participating heads and deputy heads of respective government agencies discussed and endorsed the draft progress review findings and the draft report.

1.7 Scope and Limitations of the Review

The scope of the review exercise was to review progress made in implementing the Master Plan for the period January 2012 to July 2018, to identify challenges encountered in the implementation, as well as to propose recommendations for future initiatives.

The progress review does not provide an outcome-level quantitative assessment of progress achieved vis-à-vis expected results of individual activities under the Master Plan. Rather, the review looks at progress achieved vis-à-vis objectives and activities outlined in the Master Plan.

A number of activities had been 'ongoing' during the report writing period. While these activities are expected to be completed within the 2021 time-frame, the progress review faced certain limitations to measure and report accurate progress.

A second limitation of the review exercise was its focus at progress only the output level. It is suggested to conduct an outcome level assessment and evaluation review of the Master Plan at the end of its implementation period to get a better picture of the impact achieved, as well as to inform the forthcoming Master Plan.

CHAPTER 2

Findings

2

This chapter presents the findings from the progress review and is structured according to the chapters and sections of the Master Plan for ICT in Education (2012-2021). Following a summary of key findings, this chapter includes detailed findings and progress updates of each chapter and section of the Master Plan. Each sub-sector outlines specific objectives, activities, responsibilities, a time limit, as well as expected results.

2 Findings

Structure of this chapter

This chapter is structured according to the chapters and sections of the Master Plan for ICT in Education (2012-2021). Chapters in red are aligned to the Master Plan, Chapters in green are additional relevant review findings.

- 2.1 Key Findings
- 2.2 Findings on Ownership, Supervision and Review of the Master Plan
- 2.3 Findings on Vision and Objectives
- 2.4 Findings on Implementation Strategies
- 2.5 Findings on Work Plan of the Master Plan
- 2.5.1 Pre-Primary and Primary Education
- 2.5.2 Non-Formal Education
- 2.5.3 Secondary and Higher Secondary Education
- 2.5.4 Madrasah Education at Secondary & Higher Secondary Levels
- 2.5.5 Technical & Vocational Education at Secondary & Higher Secondary Levels
- 2.5.6 Higher Education
- 2.5.7 Education Administration
- 2.6 Other Relevant Findings

2.1 Key Findings

The following key findings have emerged from the Progress Review:

- 1. ICT enhancing the teaching-learning environment:** Progress has been made in leveraging ICT to enhancing the teaching learning environment by using multimedia technologies (laptops and LCD projectors) in classrooms as well as by training teachers on ICT facilities. In addition, a limited number of institutions have been equipped with computer labs. More initiatives need to be taken as well as overall coordination among stakeholders has to be reinforced in order to reach more learners and to enhance their learning environment.
- 2. Developing professional and ICT skills of teachers:** At the primary level, no initiatives have yet been taken to formally recognize teacher degrees or diplomas in ICT training as an additional qualification for appointment as a teacher in primary school. At the secondary level, an official circular recognizing a professional ICT degree has been issued.
- 3. Improving standards of teaching and learning materials:** It is recommended to update teaching materials including books every three years. Awareness campaigns need to be initiated to widely use portals developed by the Access to Information (A2I) Programme and digital content developed by the National Curriculum and Textbook Board (NCTB).
- 4. Building up skilled human resources as per need of present times:** A limited number of master trainers have been trained on schools' existing ICT facilities. In order to build skilled human resources that are equipped with 21st century skills, more master trainers need to be trained on schools' existing facilities, as well as trained staff need to be encouraged and awarded for ICT knowledge and skills sharing.
- 5. Ensuring transparency, accountability and efficiency in educational management:** Officials need to be encouraged and awarded for taking initiatives to use ICT for ensuring transparency, accountability and efficiency.
- 6. Creating accessibility of education services at the doorsteps of common people:** More services need to be introduced and the public's awareness on existing ICT-based educational services needs to be increased.
- 7. Ensuring participation of persons concerned in education sector:** Further initiatives need to be taken to provide educational institutions with equal access to ICT resources (i.e. facilities and connectivity) in order to minimize the digital divide between urban and rural and between secondary, technical and madrasah institutions.
- 8. Alignment to the Sustainable Development Goals:** The Master Plan was prepared in alignment with the Millennium Development Goals (MDGs). Following the launch of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), a need has emerged to align the Master Plan with the goals and targets of the SDGs, particularly SDG 4.
- 9. Updating of responsibilities to reflect the Ministry of Education's restructuring:** The Ministry of Education has been restructured and two separate Divisions (Secondary and Higher Education Division, Technical and Madrasah Education Division) as well as one Directorate of Technical Education) have been formed. Responsibilities in the Master Plan have to be updated to reflect the organizational changes within the Ministry of Education.



2.2 Findings on Ownership, Supervision and Review of the Master Plan

Over the past six years, the Ministry of Education has maintained full ownership of the Master Plan.

Objectives and activities that had been attributed to the Ministry of Primary and Mass Education (MoPME) in the Master Plan have been implemented with full ownership by MoPME.

While the Master Plan foresees that implementing Ministries review their implementation progress every six months and take necessary action if progress stalls, since 2012, no initiatives have been taken to conduct the six-monthly progress reviews. MoE conducted a one-time review in 2014 using a self-reporting mechanism. Yet, following the review, no follow-up was taken towards implementing review findings. Since 2014, implementation progress has not been assessed. As a result, implementing

ministry officials were not always able to provide an update on how much progress has been made.

The Master Plan further foresees that the Master Plan itself is reviewed every three years with measures taken to make necessary amendments or revisions. As of 2018, the Master Plan has not been reviewed.

Following the split of the Ministry of Education into two Divisions in November 2016, the Secondary and Higher Education Division (SHED) and the Technical and Madrasah Education Division (TMED), SHED inherited the oversight responsibility of the Master Plan. However, no revision was proposed to assign responsibilities among the newly formed Divisions. Until today, TMED remains without any formal ownership or officially assigned role in implementing the Master Plan.

2.3 Findings on Vision and Objective

The Master Plan was developed with the great aspirations of leveraging ICT in Education to building a knowledgeable, fair and just society in Bangladesh. It was expected that by leveraging ICT in Education, society would create equal opportunities for all citizens capable to face the challenges of the 21st century.

The Master Plan spells out a clear vision and objectives for the use of ICT in Education.

Since 2012, Bangladesh has made great strides towards achieving the vision and objectives of the Master Plan. However, more needs to be done to fully achieve the vision of building a fair and just society.

Vision	Objectives
<i>Building up of a knowledgeable, fair and just society and digital Bangladesh through the use of ICT that will have impact on efficiency in education, transparency, accountability, dynamism and will further ensure accessibility of common people across the country to education services. This society shall create equal opportunities for all citizens to inculcate their individual resources and help them grow up as creative, responsible and productive citizens capable to face the challenges of the 21st century.</i>	Developing teaching-learning environment
	Developing professional ICT skills of teachers
	Improving standards of teaching-learning materials
	Building up skilled human resources as per the needs of the present time
	Ensuring of transparency, accountability and efficiency in educational management
	Creating accessibility of education services at the doorsteps of the common people
	Ensuring participation of persons concerned in the education sector

2.4 Findings on Implementing Strategies

The Master Plan includes seven Implementation Strategies to facilitate the implementation of the plan. While progress has been made in some areas, other areas require further attention.

recommended for implementing Departments to be more active in taking necessary measures to implement initiatives including through budgetary allocations.

The allocation of sufficient funds in the national budget needs to be reinforced.

Overall, in order to ensure a safe and effective use of ICT in educational institutions, special measures need to be clearly defined and taken.

Many Project Directors are still not aware of the Master Plan. Implementing Ministries do not always prioritize projects and their implementation. It is

2.5 Findings on Work Plan of the Master Plan

The Master Plan identifies six specific sub-sectors to organize and implement ICT in Education interventions. A specific vision, different objectives, activities, responsibilities, a time limit and expected

results are defined for each sub-sector. The progress review has shown that concerned officials are not always aware of the activities and expected results for each sub-sector defined in the Master Plan.

The following chapters examine progress within each of the 7 sub-sectors:

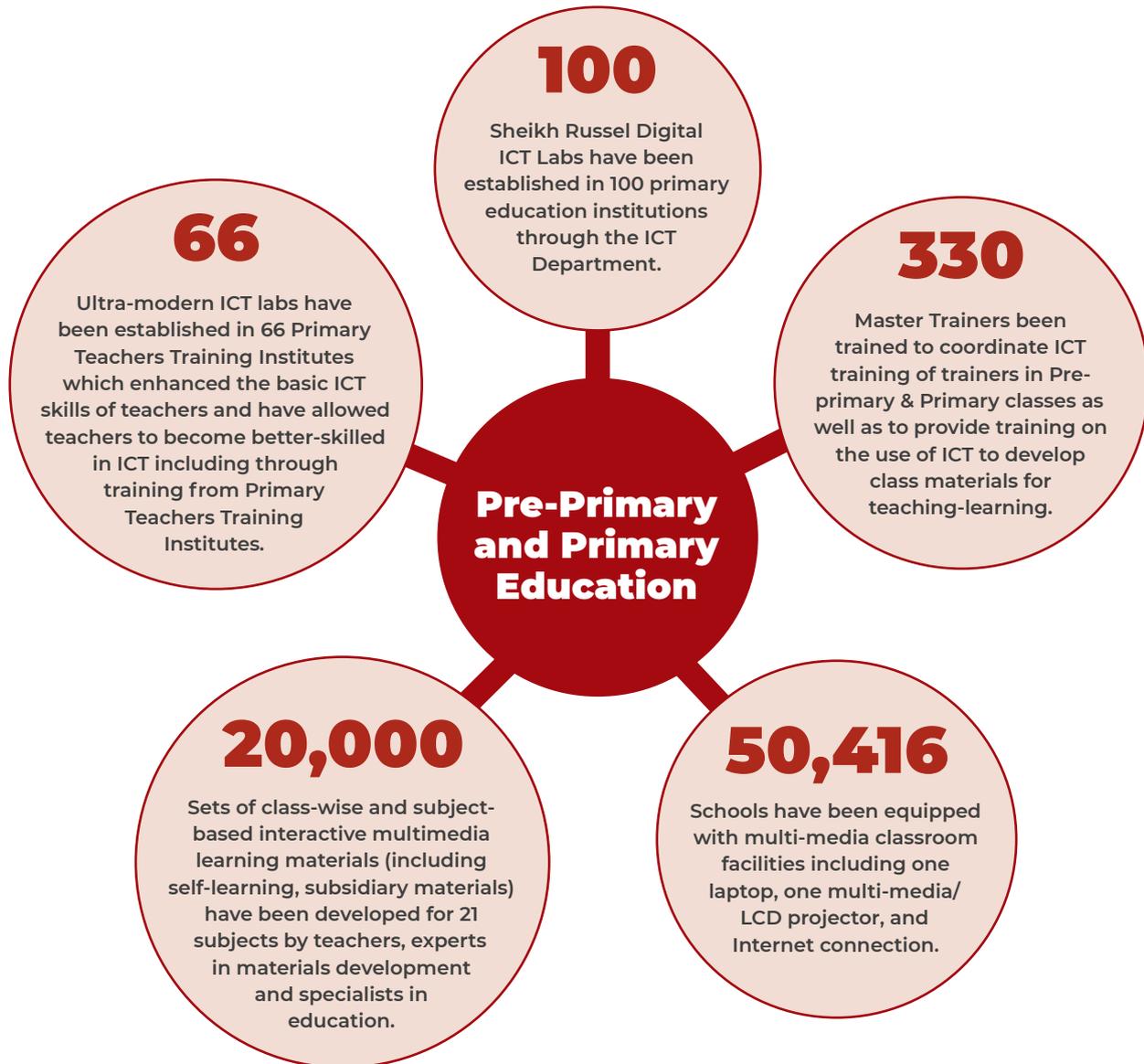
Pre-Primary and Primary Education Chapter 2.5.1	Non-Formal Education Chapter 2.5.2	General Education at Secondary Level Chapter 2.5.3	Madrasah Education at Secondary Level Chapter 2.5.4	Technical and Vocational Education at Secondary Level Chapter 2.5.5	Higher Education Chapter 2.5.6
Education Administration - Chapter 2.5.7					

**Pre-Primary
and Primary
Education**

Chapter 2.5.1



2.5.1 Review Findings of Pre-Primary and Primary Education Levels



Note: Implementation progress is visualized using colors of a traffic light, rating implementation progress in the following way:

- 1) green for implementation is on track vis-à-vis the Master Plan,
- 2) orange/amber for implementation is slightly off track but likely to meet target as per Master Plan, and
- 3) red for implementation is off target and unlikely to meet targets of the Master Plan.

Objective 1: Provision of ICT in education, appropriate to the needs of time, for the learners at primary level

Activity	Progress
1.1	 ICT has been included in the Pre-Primary level curriculum which has allowed learners to get an understanding about ICT at Pre-Primary level.
1.2	 ICT has been included in Primary level curriculum and has allowed teachers & learners of primary schools to acquire knowledge about ICT.
1.3	 Books on ICT have been developed and updated and have thus allowed learners to acquire modern ICT skills. However, the updating does not take place every three years.
1.4	 Books on ICT (in easy Bangla language) to allow teachers & learners to acquire knowledge about ICT were not supplied to all school libraries. Among the reasons is that many schools do not have proper libraries from which students can easily access books on ICT to enhance their knowledge.
1.5	 No initiatives have been taken to formally recognize degrees and diplomas in ICT training as an additional qualification for appointment as a teacher at primary school level. Yet, many teachers are motivated to acquire ICT skills (i.e. using laptop and multimedia projector) due to peer pressure from other teachers.

Objective 2: Developing the professional skills of teachers through ICT

Activity	Progress
2.1	 Inclusion of basic ICT materials (such as preparing digital content with basic computer, multi-media, Internet, presentation software) in the curriculum of teachers' training has improved ICT skills of teachers at primary schools. Teachers are also enabled to use ICT materials in classrooms.
2.2	 330 Master Trainers been trained to coordinate ICT training of trainers in Pre-primary & Primary classes as well as to provide training on the use of ICT to develop class materials for teaching-learning. Skilled manpower has been created to train primary school teachers to use ICT in teaching.
2.3	 Quality in-service training has been provided for all teachers of primary schools and helped them to acquire basic skills in ICT. The use of ICT in teaching-learning the development of learning materials using ICT has enabled teaching-learning activities in classrooms to be more effective.
2.4	 Distance learning Programmes, broadcast through radio, television & Internet to facilitate learning and to develop professional skills of primary school teachers, have not yet been introduced. Teachers have not received professional skill development opportunities through distance learning tools. As a result, teachers have not been able to become better skilled in conducting ICT activities in the classroom due to distance learning.
2.5	 Online teacher training course content and modules have not yet been made easily available. It is recommended to developed materials for an online teachers' training immediately.
2.6	 The organization of examinations of online courses in teacher training, as well as the recognition and delivery of certificates, has not yet been implemented. As a result, standards of online training cannot be maintained.
2.7	 The provision of interest-free loans with easy terms, as well as grants for teachers to help purchase computers, laptops, and other ICT materials has yet been introduced. Interviewed stakeholders expressed that this is one of the key reasons that teachers do not feel motivated to use ICT.

Objective 3: Development of teacher-training materials with the use of ICT

Activity	Progress
3.1	 20,000 sets of class-wise and subject-based interactive multimedia learning materials (including self-learning, subsidiary materials) have been developed for 21 subjects by teachers, experts in materials development and specialists in education. As a result, some quality teaching-learning materials are now available in multimedia format.
3.2	 However, not all teachers and students are aware of the materials. If the multimedia learning materials are frequently used in the classroom, teaching methods would improve, become more modern, as well as more effective.
3.3	 The preparation and distribution of subject-based audio and video materials for model class programmes jointly prepared by teachers and experts in materials development and specialists in education has yet been initiated. As of June 2018, quality teaching-learning materials are not yet available in audio-video format.
3.4	 The formal recognition and awarding of prizes for developing ICT-based quality teaching-learning materials has not yet been introduced. It is recommended to introduce formal recognition and prizes to encourage teachers, interested stakeholders, and organizations to develop teaching-learning materials.

Objective 4: Creating learner-friendly environments through infrastructural development of ICT

Activity	Progress
4.1	 Ultra-modern ICT labs have been established in 66 Primary Teachers Training Institutes which enhanced basic ICT skills of teachers and gas allowed teachers to become better-skilled in ICT including through training from Primary Teachers Training Institutes. More labs should be established in 11 Primary Teachers Training Institutes in the near future.
4.2	 Installation of faster Internet connection at each PTI has been completed. As a result, teachers are able to collect information through Internet at PTIs.
4.3	 ICT libraries, equipped with national and international books, journals and periodicals on ICT, have yet been established. As a result, learning materials required for professional skills development are not yet easily available for teachers.
4.4	 50,416 schools have been equipped with multi-media classroom facilities including one laptop, one multi-media/LCD projector, and Internet connection. However, many schools still do not have substitute power sources for the frequent power cuts, which impedes the use of the ICT equipment.
4.5	 Not all classrooms of all educational institutions have been turned into ICT-enabled multi-media classrooms. However, progress through the Fourth Primary Education Development Programme is underway.
4.6	 Sheikh Russel Digital ICT Labs have been established in 100 primary education institutions through the ICT Department. The ICT Labs are equipped with an adequate number of computer/laptops and have an Internet connection for the use of ICT in education. However, thousands of learners are still not able to acquire subject-based knowledge through practical lessons.
4.8	 The ICT Policy by MoICT has been approved. However, the formulation of policies/planning for supply, use, and maintenance of ICT materials and the involvement of Management Committees and communities has yet been completed. Once each institution will have a policy, maintenance for ICT materials in the schools will become easier.

Non-Formal Education

Chapter 2.5.2



2.5.2 Review Findings in the field of Non-Formal Education

Objective 1: Building up skilled manpower through the use of ICT in Non-Formal Education

Activity	Progress
1.1	 The inclusion of ICT in the Non-Formal Education (NFE) curriculum and development of ICT-based materials with special reference to continuing & skill development education to create opportunities of the learners to acquire required skills as per their needs has yet been completed. As a result, large segments of the population are not able to contribute to economic activities due to their limited exposure to ICT through NFE.
1.2	 The coordination of ICT in skill development courses, which enable learners to acquire proficiency in ICT along with other subjects, has not yet been completed. As a result, learners face challenges to become skilled in ICT due to the lack of opportunities to acquire skills.
1.3	 The development of an independent trade course on ICT has yet commenced.

Objective 2: Creating access of common people to Non-Formal Education through the use of ICT

Activity	Progress
2.1	 The first phase, namely the establishment of one permanent NFE Learning Centre for each Union (equipped with ICT facilities such as TV, radio, Internet connection, computer/laptop, and multi-media/LCD projector) in collaboration with UISC, has not yet been completed. As a result, NFE teachers face difficulties in making lessons more interactive and students acquiring knowledge with the help of ICT equipment at the Union level.
2.2	 The second phase, namely the establishment of one permanent NFE Learning Centre in each village (equipped with ICT facilities such as TV, radio, Internet connection, computer/laptop, and multi-media/LCD projector) in collaboration with UISC, has not yet been completed. As a result, NFE teachers face difficulties in making lessons more interactive and students acquiring knowledge with the help of ICT equipment at village level.
2.3	 The broadcasting of attractive programs on adult education and other NFE areas on radio and TV has not yet been initiated. As a result, adults are not able to learn from popular and accessible broadcasting media such as radio and TV. If effectively used, the broadcasting of educational programs on radio and TV could play an effective role in adult education and NFE, and advance the development of a skilled labor force in Bangladesh.
2.4	 The broadcasting of interactive programs on adult education on radio and TV has not yet been initiated. As a result, NFE students are currently not exposed to specially designed interactive programmes on radio and TV.
2.5	 Due to insufficient resources, monitoring activities of interactive programs at regular intervals have yet been implemented.

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-  3) red for implementation is off target and unlikely to meet targets of the Master Plan.

Activity	Progress
2.6	 The orientation and motivation of prospective makers of quality radio and TV programs on adult and Non-Formal Education has yet been completed. A number of stakeholders feel encouraged to produce programs on adult and Non-Formal Education, but without orientation and training on the needs of NFE students and learning requirements, the quality of productions continues to be inadequate for NFE students.
2.7	 Early Childhood Development Programs (ECDP) that leverage multi-media materials and are prepared especially for the poor, slow, disadvantaged children and those living in distant areas (preparing children for enrollment in school) have yet been completed.

Objective 3: Improvement of Non-Formal Education with the use of ICT

Activity	Progress
3.1	 The joint development of subject-based interactive multi-media learning materials (including self-learning and subsidiary materials) by teachers and experts in learning material development and specialists in education have yet been completed. As a result, quality ICT-based learning materials are not yet available to Non-Formal Education learners.
3.2	 Trainings for teachers and assistants of NFE through the use of ICT has been conducted at very limited scale. As a result, teachers and assistants of NFE still do not have easy access to ICT materials and hence limit their use in teaching NFE students. The inadequate training and very limited access to ICT materials in NFE education creates barriers to sustainable educational development in the NFE sector.
3.3	 Formal recognition and awarding of prizes for developing ICT-based quality teaching-learning materials for NFE has yet been introduced. In the future, organizations and individuals who develop ICT-based quality teaching-learning materials shall be recognized in order to encourage them to make more ICT-based learning materials.
3.4	 NFE text-books & subsidiary digital content have yet been incorporated in the national education portal. As a result, NFE text-books & subsidiary digital content are not available country-wide and can't be accessed by NFE students from home.

A photograph of a classroom scene. A female teacher, wearing a light green saree with intricate patterns and tassels, stands on the left side of the frame, facing a group of students. The students, mostly boys in white school uniforms, are seated at long wooden desks, looking attentively towards the teacher. The classroom has large windows with metal grilles, and the walls are a plain, light color. The overall atmosphere is one of a typical school lesson.

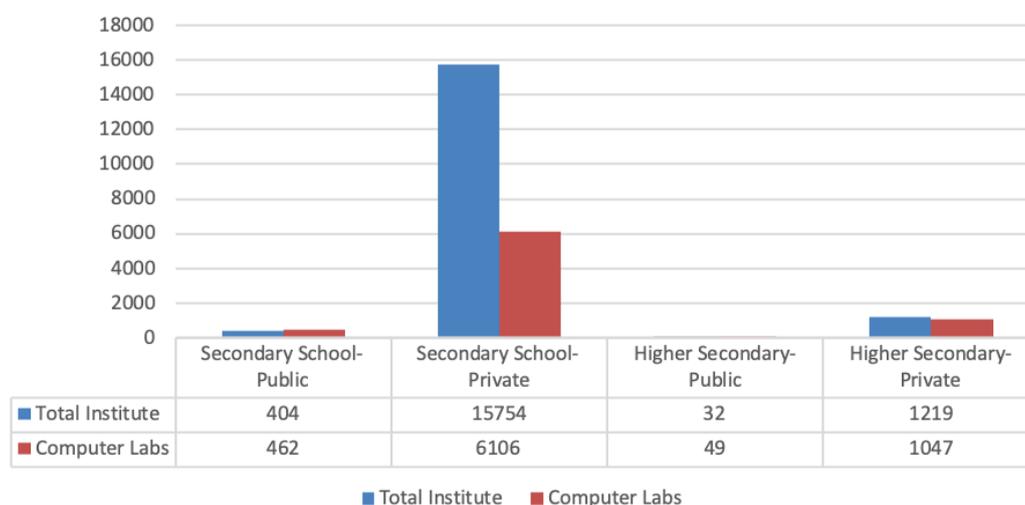
**General
Education at
Secondary
and Higher
Secondary
Level**
Chapter 2.5.3

2.5.3 Review Findings at Secondary and Higher Secondary Education Level

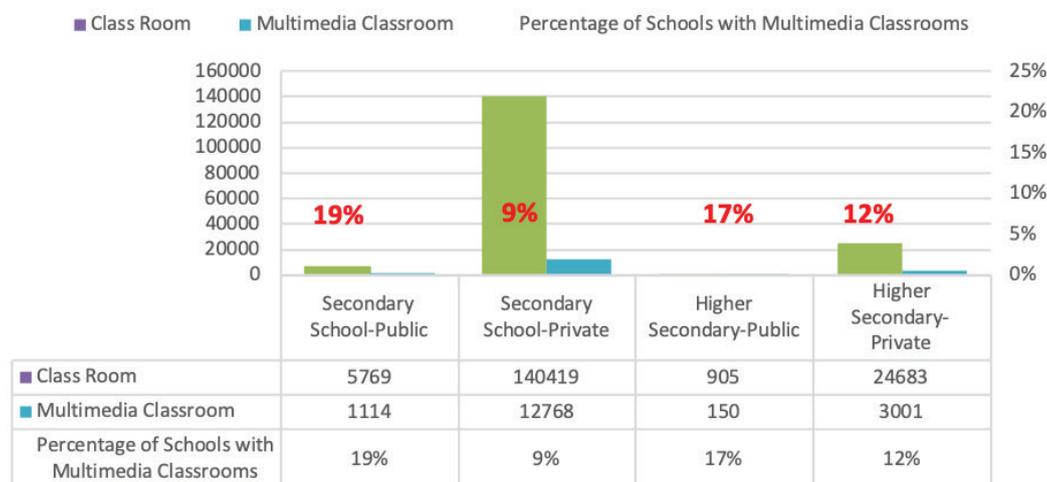
Table and Graphic: Multimedia Classroom and Computer Lab Information as of 2018
(Source: Bangladesh Education Statistics, BANBEIS, 2018):

Type of Institute	Total No of Institutes	No of Computer Labs	No of Classrooms	No of Multimedia Classrooms
Secondary School-Public	404	462	5769	1114
Secondary School-Private	15754	6106	140419	12768
Higher Secondary-Public	32	49	905	150
Higher Secondary-Private	1219	1047	24683	3001

Education Institutions and Computer Labs



Classrooms and Multimedia Classrooms



Objective 1: Educating the learners at secondary & higher secondary levels in modern and appropriate ICT education

Activity	Progress
1.1	 Text books and the curriculum of secondary and higher secondary levels have been developed and adjusted to the updated needs of learners. As a result, students are able to acquire modern and appropriate ICT skills. However, due to limited hardware resources, students remain having limited practical ICT knowledge (i.e. programming, networking). Moving forward, it is suggested to review text books and the curriculum ever 3 years to ensure that appropriate ICT skills are taught to learners.
1.2	 Text books (both in Bangla and English) have been supplied to each educational institution and have allowed teachers and learners to acquire knowledge about ICT. However, many schools outside of metropolitan areas do not have proper libraries which makes it at times difficult to learners to access text books outside the class room.
1.3	 The appointment of teachers with ICT background have ensured the supply of skilled teachers in ICT at secondary and higher secondary level. As a result, teachers' appointment throughout the country have enabled students to share and gain ICT knowledge.

Objective 2: Development of professional skills of teachers through ICT

Activity	Progress
2.1	 The inclusion of basic elements of ICT (such as computer, multi-media, Internet, presentation software, and developing digital content) in the teacher training curriculum has enhanced the development of ICT skills of teachers. As a result, teachers are better trained to use ICT in classrooms.
2.2	 ICT teaching-learning in classrooms at secondary & higher secondary levels have been coordinated and carried out. More than 1000 master trainers, which are training teachers in developing subject-based teaching-learning materials for different classes, have been trained. As a result, a large amount of skilled manpower has been created to conduct teacher training for the delivery of ICT-based lessons.
2.3	 Until 2018, more than 183,750 teachers have received ICT training. The use of ICT in teaching-learning curriculum & provision of quality pre-service and in-service training in developing learning materials with ICT is ongoing. It is suggested to continue the teaching-learning programme to reach all approx. 300,000 secondary-level teachers and to ensure the effective use of ICT in classrooms
2.4	 Courses on distance education to develop teachers' professional skills and to help conduct programs on e-learning through radio, TV and Internet have been developed. Web portals such as www.teachers.gov.bd and www.muktopaath.com have enabled teachers to have better opportunities to develop professional skills. Since 2012, teachers have become better skilled to manage classrooms with online materials.
2.5	 A formal recognition and certification of online courses on teachers' training has yet been introduced. However, the 'Best teacher award' encourages teachers to develop their professional skills.
2.6	 The development of online course content/modules for teacher training is ongoing. More than 328,000 teachers are a member of the teacher online portal and more than 143,000 digital content elements have been developed. Moving forward, it is suggested to increase the number of initiatives to allow for an easier development and access of teaching materials for teachers online training.

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Activity	Progress
2.7	 Online examinations and awards have yet been introduced. It is recommended to introduce recognition and online certifications of exams to maintain the standards of teacher online training as well as to help develop teachers' professional skills.
2.8	 The provision of interest-free loans with easy terms, as well as grants for teachers to help purchase computers, laptops, and other ICT materials has yet been introduced. Interviewed stakeholder expressed that this is one of the key reasons that teachers do not feel motivated to use ICT.

Objective 3: Developing teaching-learning materials through ICT

Activity	Progress
3.1	 Teachers, specialists in education material development and specialists in education development are jointly developing class-based and subject-based multi-media learning materials (including self-learning & subsidiary materials). To ensure the future availability of quality teaching-learning materials, to make learning easier for students, and to introduce modern and effective teaching methods, it is suggested to continue the joint effort.
3.2	 Various teachers, experts in teaching-learning materials, and specialists in education are individually preparing videos of subject-based models for classroom use. Moving forward, a coordinated approach should be taken to ensure that all students benefit from quality teaching-learning materials.
3.3	 Formal recognition and awarding of prizes for developing ICT-based quality teaching-learning materials has yet been introduced. Moving forward, organizations and individuals who develop ICT-based quality teaching-learning materials shall be recognized in order to encourage them as well as others to make more ICT-based learning materials. Teachers shall be recognized and encouraged to upload their content to the teachers portal.
3.4	 Subsidiary education materials that meet the needs of slow and disadvantaged learners have not yet been developed.
3.5	 Subsidiary education materials for physically & mentally challenged learners (such as text to speech, screen reader etc.) are currently being developed with assistance from the Access to Information (A2I) Programme. Already released education materials have made learning for disabled students especially for the blind easier.
3.6	 Not all textbooks and subsidiary digital content have yet been digitized and included in the national education portal. It is strongly recommended to digitize all textbooks and subsidiary content to enable teachers, learners, and educational institutions to access teaching-learning materials easily.

Objective 4: Creating an education-friendly environment through infrastructural development of ICT

Activity	Progress
4.1	 The establishment of ultra-modern ICT labs in Teachers Training Institutes (TTC) that develop teachers' basic ICT skills is ongoing. So far, at least one computer lab has been established in each TTC and as a result, teachers are better trained in ICT. The Bangladesh Bureau of Educational Information and Statistics (BANBEIS) has established Upazila ICT Training and Resource Centres for Education (UITRCE) in 125 Upazilas. UITRCEs in an additional 160 Upazilas are underway.
4.2	 A high-speed Internet connection has been installed in 14 Teachers Training Institutes (TTC) and in 5 Higher Secondary Teachers Training Institutes (HSTTI). As a result, teachers are better equipped with access to information through high-speed Internet.
4.3	 Teachers Training Institutes (TTC) have yet been equipped with ICT libraries holding national and international publications, periodicals and journals. ICT libraries are an important milestone to ensure that necessary learning materials required for the professional development of teachers are available.
4.4	 Electronic libraries with intercom facilities and connectivity to the global research network have yet been established in Teachers Training Institutes (TTC). As a result, teachers' exposure to global teaching methods and educational research remains limited.
4.5	 TTCs have yet been equipped with ICT facilities that allow training programs to be conducted via video conferencing, despite all 14 TTCs and 5 HSTTIs having uniform standards of teachers training at their premises and all the TTCs and HSTTIs could connect to each other through video conferencing.
4.6	 32,667 educational institutions have been equipped with at least one multi-media classroom with one laptop, one multi-media/LCD projector, and Internet connection for the use of ICT in education. ICT facilities have improved teaching-learning methods through the use of ICT. Moving forward, substitute power sources need to be arranged to allow for a proper utilization of equipped multimedia classrooms during power cuts.
4.7	 Not all classrooms have been transformed into multi-media classrooms that allow the use of ICT and provide learners with better and wider access to the use of ICT. However, first initiatives have been taken in each institution to transform classrooms into multi-media classrooms.
4.8	 At the Upazila level, 1,083 ICT labs, each with an adequate number of computer/laptop & Internet connection for the use of ICT in education, have been established in Upazila level institutions. Learners are now better equipped to gain subject-based knowledge through practical lessons.
4.9	 At the rural level, education institutions have yet been equipped with ICT labs due to resource limitations. If rural education institutions are not equipped with ICT labs in the near future, the digital divide will further grow.

Activity	Progress
4.10	 Not all educational institutions have been included in the Bangladesh Research and Education Network (BdREN) yet. As a result, certain teachers and learners are not able to easily and safely exchange relevant information and education materials.
4.11	 While a policy on the use of computers at ICT labs has been formulated, no policies have been formulated that specify the planning of ICT supply, the use and maintenance of ICT materials, and that involve management committees and communities. Relevant policies shall be formulated as soon as possible to regulate the supply of ICT equipment for schools.
4.12	 Educational programs on Sangsad TV are not regularly telecast. As a result, access to knowledge through TV programs has not become easier for teachers and students.
4.13	 No quality Education programmes to be screened on TV have been prepared. As a result, teachers and learners are unable to learn from TV programs. It was pointed out that online programs are available for teachers and learners who have access to the Internet.
4.14	 New TV channels with assistance from the government for telecasting educational programs have not yet started. Existing TV channels can be utilized for telecasting educational programs.
4.15	 A national educational portal to host and exchange all teaching-learning materials has yet been created. However, the Teachers Portal (www.teachers.gov.bd) is hosting teaching-learning materials and makes them easily accessible. The Teachers Portal also makes the exchange of knowledge-based learning easier and has enabled teachers to share multimedia resources. Thanks to the Teachers Portal, teachers and learners are now able to download and print learning materials at limited scale.
4.16	 Books on ICT (both in Bangla & English) are supplied to all educational institutions. However, many institutions in rural areas do not have adequate library space and hence students and teachers often cannot access books on ICT. As a result, the digital divide between urban and rural areas is increasing.
4.17	 The planned Bangladesh ICT in Education Research Centre (BIERC) under MoE has not been established yet. Establishing the BIERC would make it easier to conduct research on activities in ICT in education, as well as to monitor and evaluate ICT in education activities, thus increasing the effective use of ICT in education.



**Madrasah
Education at
Secondary
Level**

Chapter 2.5.4

Photo: Directorate of Secondary and Higher Education



Photo: Hefez Abdur Razzak Jamia Islamia Dakhil Madrasah, Azimpur, Dhaka

2.5.4 Review Findings of Madrasah Education at Secondary & Higher Secondary Levels

Objective 1: Educating all learners of Madrasah at all levels with ICT in education that meets the needs of times

Activity	Progress
1.1	 The curriculum, course content, and textbooks for Madrasah education relating to ICT in education have not been updated every three years. As a result, learners are limited in becoming skilled in modern and appropriate ICT skills.
1.2	 The recruitment of ICT graduates or ICT diploma-holders as teachers has not been ensured for Madrasah education. As a result, not all teachers are skilled in ICT and classroom teaching in ICT is not very effective.

Objective 2: Developing of professional skills of teachers with the use of ICT

Activity	Progress
2.1	 ICT materials have been included in the teachers' training curriculum for Madrasah teachers and have enhanced teachers' skills (including skills to develop digital content with basic computer, multimedia, Internet, presentation software etc.). Still, there is scope for further enhancement of teachers' ICT skills.
2.2	 More than 400 master trainers have been trained. Master trainers coordinate teaching-learning activities in ICT within their classroom as well as train other teachers in developing class-based teaching-learning materials. Unfortunately, many Madrasah teachers are not eager to become skilled in ICT-based education through teachers' training.
2.3	 Quality pre-service and in-service training has been introduced for all Madrasah teachers in order to help them acquire primary skills in ICT and to enable them to apply ICT in teaching-learning activities as well as develop relevant training materials. Pre- and in-service training is available at TTCs, HSTTIs, NAEMs, and BMTTIs.
2.4	 Distance Learning Courses to train Madrasah teachers in the use of ICT have yet been introduced. As a result, Madrasah teachers are currently not able to receive training through distance learning.
2.5	 The provision of interest-free loans with easy terms, as well as grants for Madrasah teachers to help purchase computers, laptops, and other ICT materials has yet been introduced. Many Madrasah teachers are not financially solvent as well as do not feel motivated to use ICT.

Objective 3: Developing teaching-learning materials with the use of ICT

Activity	Progress
3.1	 Teachers, specialists in education material development, and specialists in education development have yet jointly developed class-based and subject-based multi-media learning materials (including self-learning & subsidiary materials). As a result, quality teaching-learning materials are not yet available digitally.
3.2	 Videos on subject-based model class activities have yet been prepared or distributed by teachers, education material development experts, or education specialists.

Note: Implementation progress is visualized using colors of a traffic light, rating implementation progress in the following way:

-  1) green for implementation is on track vis-à-vis the Master Plan,
-  2) orange/amber for implementation is slightly off track but likely to meet target as per Master Plan, and
-  3) red for implementation is off target and unlikely to meet targets of the Master Plan.

Activity	Progress
3.3	 The Madrasah education board has yet introduced any form of recognition or awarding of prizes for developed ICT-based quality teaching-learning materials. Moving forward, organizations and individuals who develop ICT-based quality teaching-learning materials shall be recognized in order to encourage them to make more ICT-based learning materials. Teachers shall be recognized and encouraged to upload their content to the teacher portal.
3.4	 Subsidiary education materials that meet the needs of slow and disadvantaged learners have yet been developed. As a result, slow and disadvantaged learners are unable to learn by using substitute education materials.
3.5	 Subsidiary education materials for physically & mentally challenged learners (such as text to speech, screen reader etc.) have yet been developed. As a result, disabled learners are unable to learn through the use of substitute materials.
3.6	 Self-learning subsidiary materials that leverage ICT for learners have yet been developed. As a result, learners are not motivated to self-learn and they remain dependent on their teachers.
3.7	 Not all textbooks and subsidiary digital content has been included in the national education portal. As a result, teachers, learners, and educational institutions are not able to easily access and collect teaching-learning materials.

Objective 4: Creation of education-friendly environment with the infrastructural development of ICT

Activity	Progress
4.1	 One ICT lab at the Bangladesh Madrasah Teachers Training Institute (BMTTI) has been established. While the ICT lab has allowed teachers to become skilled in ICT, students are not becoming skilled yet as Madrasah are yet equipped with ICT equipment.
4.2	 The establishment of ICT labs at all Madrasah with at least 20 computers/laptops is underway. In the very near future, once the Madrasah has been equipped with ICT equipment, teachers and students will become skilled in the use of ICT. The growing digital divide between rural and urban areas needs to be addressed.
4.3	 The establishment of one multi-media classroom with one laptop, one multi-media projector/ LCD screen, and Internet connectivity per Madrasah is underway. The arrangement of a substitute power source during power cuts requires to be addressed to make ICT-enabled teaching-learning fruitful and effective.
4.4	 Due to resource limitations, the transformation of all Madrasah classrooms into multi-media classrooms remains a challenge. Initiatives have been taken to transform at least one classroom in every Madrasah into a multimedia classroom.
4.5	 No policies have been formulated yet that specify the planning of ICT supply, the use and maintenance of ICT materials, and that involve communities. Relevant policies shall be formulated as soon as possible to regulate the supply of ICT equipment for Madrasahs.

A photograph of a technical classroom where students are working on projects. In the foreground, a student in a white hijab is writing on a piece of paper. To her right, a student in a black hijab is using a yellow highlighter on a document. In the background, other students in blue uniforms and red/orange headscarves are also working. The desk is cluttered with various tools and materials, including a red utility knife, a green soldering iron, a red stapler, and several sheets of paper. A small copper-colored board is visible in the bottom left corner.

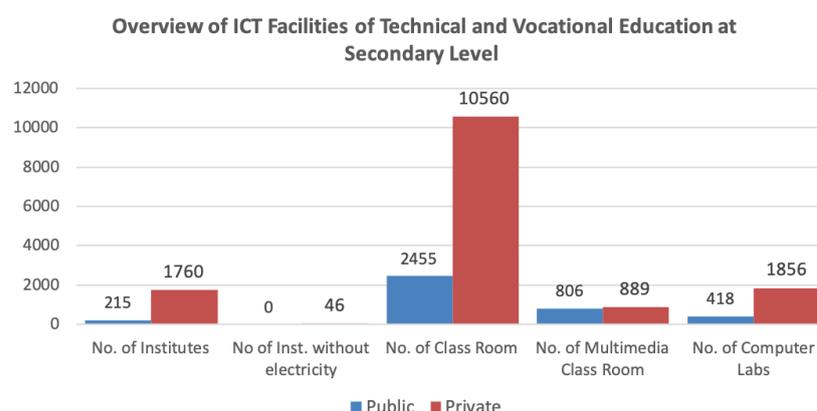
**Technical and
Vocational
Education at
Secondary
Level**

Chapter 2.5.5

2.5.5 Review Findings of Technical and Vocational Education at Secondary Level

Table and Graphic: Overview of ICT Facilities of Technical and Vocational Education at Secondary Level
(Source: Bangladesh Education Statistics, BANBEIS, 2018):

Management	Total No of Institutes	No of Classrooms	No of Multimedia Classrooms	No of Computer Labs	No of Institutions without electricity
Public	215	2455	806	418	0
Private	1760	10560	889	1856	46



Objective 1: Providing assistance to the learners of technical & vocational education to become skilled in modern ICT education that is appropriate to the needs of times

Activity	Progress
1.1	 With the goal to develop ICT skills that are appropriate to the needs of modern times, the curriculum, books, and course content of technical & vocational education have been updated with an eye to the global market. Updated content has enabled students to become skilled in modern and appropriate knowledge of ICT. It is recommended to continue updating content ever three to five years.

Objective 2: Developing professional skills of teachers with the use of ICT

Activity	Progress
2.1	 ICT materials have been included in the teachers' training curriculum and have enhanced teachers' skills (including skills to develop digital content with basic computer, multimedia, Internet, presentation software).
2.2	 More than 100 master trainers have been trained for technical and vocational education. Master trainers coordinate teaching-learning activities in ICT within their classroom as well as train other teachers in developing class-based teaching-learning materials. The training of master trainers has resulted in the creation of skilled manpower in the area of teacher training with focus on ICT.

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-  3) red for implementation is off target and unlikely to meet targets of the Master Plan.

Activity	Progress
2.3	 Quality pre-service and in-service training has been introduced for all teachers to help them acquire primary skills in ICT and to enable them to apply ICT in teaching-learning activities as well as develop relevant training materials. Teachers are more skilled to use ICT in classroom activities
2.4	 The provision of interest-free loans with easy terms, as well as grants for teachers to help purchase computers, laptops, and other ICT materials has yet been introduced.

Objective 3: Development of teaching-learning materials with the use of ICT

Activity	Progress
3.1	 Teachers and specialists in education material development are developing class-based and subject-based multi-media learning materials (including self-learning & subsidiary materials). Quality teaching-learning materials are available.
3.2	 Videos on subject-based model class activities have yet been developed by teachers and experts on learning materials. As a result, quality teaching-learning video materials are not yet readily available.
3.3	 Formal recognition and awarding of prizes for the development of ICT-based quality teaching-learning materials has yet been introduced. Teachers and education institutions are not incentivized to develop teaching-learning materials.
3.4	 Subsidiary education materials that meet the needs of slow and disadvantaged learners have not yet been developed.
3.5	 Subsidiary education materials for physically & mentally challenged learners (such as text to speech, screen reader etc.) have yet been prepared. Disabled learners face difficulties learning.
3.6	 Not all textbooks and subsidiary digital content have yet been digitized and included in the national education portal. It is strongly recommended to digitize all textbooks and subsidiary content to enable teachers, learners, and educational institutions to access teaching-learning materials easily.

Objective 4: Creation of education-friendly environment with the infrastructural development of ICT

Activity	Progress
4.1	 ICT labs have been establishment in each technical school and college (TSC). As a result, teachers and students are becoming skilled in the use of ICT.
4.2	 ICT labs have been establishment in each Vocational Teachers Training Institute (VTTI). As a result, through the use of ICT, teacher training has become more effective and teachers are becoming skilled in the use of ICT.
4.3	 ICT labs have been established in each Technical Teachers Training College (TTC). As a result, through the use of ICT, teacher training has become more effective and teachers are becoming skilled in the use of ICT.
4.4	 ICT labs have been established in each Engineering College. As a result, students have become more skilled in the use of ICT.
4.5	 ICT labs have been established in each Polytechnic Institute. As a result, students have become more skilled in the use of ICT. Presence of male students in ICT labs at polytechnic institutes is proportionately higher than female students.

Activity	Progress
4.6	 Due to limited resources not all classrooms and labs have been equipped with multi-media facilities (such as laptops, multimedia/LCD projectors, and Internet connectivity). Once equipped, teaching-learning in the classroom will become more effective.
4.7	 Due to limited resources not all classrooms and labs of each Vocational Teachers Training Institute (VTTI) have been equipped with multi-media facilities (such as laptops, multimedia/LCD projectors, and Internet connectivity). However, ICT is being used for teacher training using existing multimedia facilities.
4.8	 Due to limited resources not all classrooms and labs of each Teachers Training Institute (TTI) have been equipped with multi-media facilities (such as laptops, multimedia/LCD projectors, and Internet connectivity). However, ICT is being used for teacher training using existing multimedia facilities.
4.9	 Due to limited resources not all classrooms and labs of each Engineering College have been equipped with multi-media facilities (such as laptops, multimedia/LCD projectors, and Internet connectivity). Once equipped, teaching-learning in the classroom will become more effective.
4.10	 Due to limited resources not all classrooms and labs of each Polytechnic Institute have been equipped with multi-media facilities (such as laptop, multimedia/LCD projector, and Internet connection). Once equipped, teaching-learning in the classroom will become more effective and teachers and students will have greater opportunities to use ICT.
4.11	 Online catalogues for libraries of each institution of vocational & technical education have yet been developed. Currently, there is no platform or facility for online services like searching, and requisition. Introducing online catalogues in libraries would enable library management to become more efficient and allow for an easier use of the library by the teachers and students.
4.12	 The majority of collection of books and journals at libraries of Technical & Vocational education institutions have yet been digitized. Digitizing and introducing digital formats will enable an easier use of libraries by teachers and students.
4.13	 Not all new items are published in digital format, nor included or preserved in digital libraries. Introducing digital publishing will enable library management to become more efficient and teachers and students could make more use of online libraries.
4.14	 An online placement cell for graduates of the Bangladesh Technical Education Board that would assist graduates and provide them with necessary services, has yet been created. An online placement cell would allow learners to find early placements as well as help employers to find skilled human resources.
4.15	 No initiatives have been taken to assess the demand of technical human resources required for national and international industrial houses. A Management Information System (MIS) has yet been created. It is recommended to conduct curriculum and education planning following a needs assessment.
4.16	 An Education Management Information System (EMIS) that successfully gathers, manages, and exchanges information on technical and vocational education internally has been developed. It was recommended to make EMIS public to ensure that information relating to the planning of education is provided and that the public has access to information about technical and vocational education.

Higher Education

Chapter 2.5.6



Photo: Directorate of Secondary and Higher Education



Photo: Directorate of Secondary and Higher Education

2.5.6 Review Findings of Higher Education

Table: Number of Computer Labs per Type of Education Institution (Source: Bangladesh Education Statistics, BANBEIS, 2018):

Type of Institute	No. of Institutes	No. of Computer Labs
Secondary School Public	404	462
Secondary School Private	15754	6106
Higher Secondary Public	32	49
Higher Secondary Private	1219	1047
Madrasah Public	3	2
Madrasah Private	9256	1630
College Public	601	627
College Private	2609	1977
Technical Institute Public	215	418
Technical Institute Private	1760	1856

Objective 1: Use of ICT for the development and creation of opportunities in the institutions of higher education

Activity	Progress
1.1	<p> Current status of provision of ICT opportunities at institutions of higher education:</p> <ol style="list-style-type: none"> Almost all institutions of higher education have multimedia facilities in one or more of their classrooms. Through the support of the Higher Education Quality Enhancement Project (HEQEP) project, several public universities have computer facilities with high-speed Internet connection in their seminar libraries of each department. Most of the public and private universities have established ICT labs with state-of-the-art computers, other ICT equipment, as well as have a high-speed Internet connection to facilitate practical lessons. The "remote lab" initiative has not been pursued yet at the university level. Several universities are providing high-speed wireless Internet at limited scale. Several universities have established a number of Internet browsing centres that can be used by students. Some departments have provided computers with Internet connection to all teachers as a result of individual initiatives. However, not all departments have access to the Internet. The University Grants Commission (UGC) has yet approved processes for the establishment of a powerful ICT support cell/help desk, the recruitment of skilled manpower for repairs, as well as the provision of services and maintenance of ICT equipment. Universities are providing free Internet services for teachers and students of all higher education institutions within campus periphery. <p>Overall the acquisition and knowledge of ICT has become easier for both teachers and students. Higher education institutions have been enriched with ICT.</p>

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Activity	Progress
1.2	<p> Current status of activities of Phase I of establishing digital library in each institution of higher education:</p> <ol style="list-style-type: none"> No substantial progress has been achieved in preparing online catalogues for central & departmental libraries of all higher education institutions. No substantial progress has been achieved in preparing catalogues with an open standard (i.e. MARC) to allow them to be interchanged. A few universities have developed provisions of online services in their libraries. More than 14,400 e-books and 3,000 journals have been supplied to over 31 public and private universities. The University Grants Commission has yet established a digital library and has yet been connected to all higher education institutions' libraries. <p>Current status of activities of Phase II of establishing digital library in each institution of higher education:</p> <ol style="list-style-type: none"> No substantial progress has been achieved in digitizing books and journals from the central & departmental libraries of higher education institutions into digital format. A number of initiatives have been taken to publish higher education institution's publications simultaneously both in printed & digital versions. A number of initiatives have been taken for each digital publication to undergo the accession and preservation process of digital libraries of universities. <p>Above mentioned initiatives have improved stakeholders' skills in library management, have provided easy access to books and journals for teachers and students, as well as have provided adequate opportunities for learners to access knowledge that encourages cultivation of knowledge in the future.</p>
1.3	<p> To advance ICT-based distance learning, the following progress has been achieved at the Bangladesh Open University (BOU):</p> <ol style="list-style-type: none"> Connectivity between the central campus of BOU and all regional offices in order to run the country-wide education programme has yet been established. Separate radio & TV channels for BOU education programs have yet been established. Neither interactive virtual classrooms, nor facilities for web-based lecture presentation that would allow to pursue the outlined objectives of teaching, have been established. ICT-enabled teaching facilities through TV have been created and 'mobile' technology is yet to be deployed at large scale. Teaching channels that are leveraging Internet radio have yet been established. The automation of BOU, to make its academic and administrative activities more radical, transparent, and efficient, has yet been completed. High-speed Internet connection has been established within BOU premises. Training for BOU teachers that enables teachers to use ICT and educational tools & digital content, has been provided. An Online education programme has been introduced. The establishment of a country-wide network of skilled ICT manpower, as well as the large-scale development of human resources through distance learning has yet been done.
1.4	<p> Two universities (i.e. SAU and BSMMU) have been equipped with video conferencing facilities with support from Higher Education Quality Enhancement Project (HEQEP). The video conferencing facilities have allowed an expedition of academic and administrative activities through inter-university communication & UGC. It is recommended to equip all universities with video conferencing facilities in the near future.</p>

Objective 2: Increasing the use of ICT to enhance the professional skills of the teachers to meet the needs of the fast-changing society in this age of globalization

Activity	Progress
2.1	<p> While it has been imperative on the part of UGC (for teachers of the universities) and for the National University (for the college teachers) to establish 2 training institutes in order to provide training for teachers on the use of ICT in education, no progress has been made. As a result, there has been no improvement of professional ICT skills of teachers.</p>
2.2	<p> No initiative has been taken by UGC to encourage teachers to develop ICT-based learning materials. As a result, UGC's contribution to develop digital content and education materials has been very limited.</p>

Objective 3: Coordination of ICT to upgrade the standard of teaching-learning up to the international level

Activity	Progress
3.1	 No initiatives have been taken by UGC to ensure the quality of digital education materials. As a result, teaching-learning standards have not been upgraded to international level.
3.2	 No initiatives have been taken by UGC to enhance teaching-learning standards through exchanges of education materials and curricula with higher education institutions of other countries. As a result, teaching-learning standards have not been upgraded to the international level.

Objective 4: Ensuring the use of ICT to encourage creation of new and fresh knowledge and exchanges thereof

Activity	Progress
4.1	 Mutual contacts have been established between six universities and several international higher education institutions through ICT to facilitate and encourage an exchange of new knowledge and ideas. This has resulted in the upgrading of ICT teaching-learning standards to international level.
4.2	 The Higher Education Quality Enhancement Project (HEQEP) project has made an effort to establish a liaison between higher education institutions and industries, and to create human resources as per market needs. Through coordinated efforts of higher education institutions and the industries, manpower has been created will skills relevant for the job market.
4.3	 The Higher Education Quality Enhancement Project (HEQEP) project has established and maintained a "Community of Practice" platform for exchanges of teachers' knowledge & ideas of innovation. This has resulted in the creation and encouragement of new research through exchange of knowledge & innovative efforts.

Objective 5: Ensuring of proper use of ICT with the objective of making the administrative & academic activities of the higher education institutions more radical, transparent and efficient

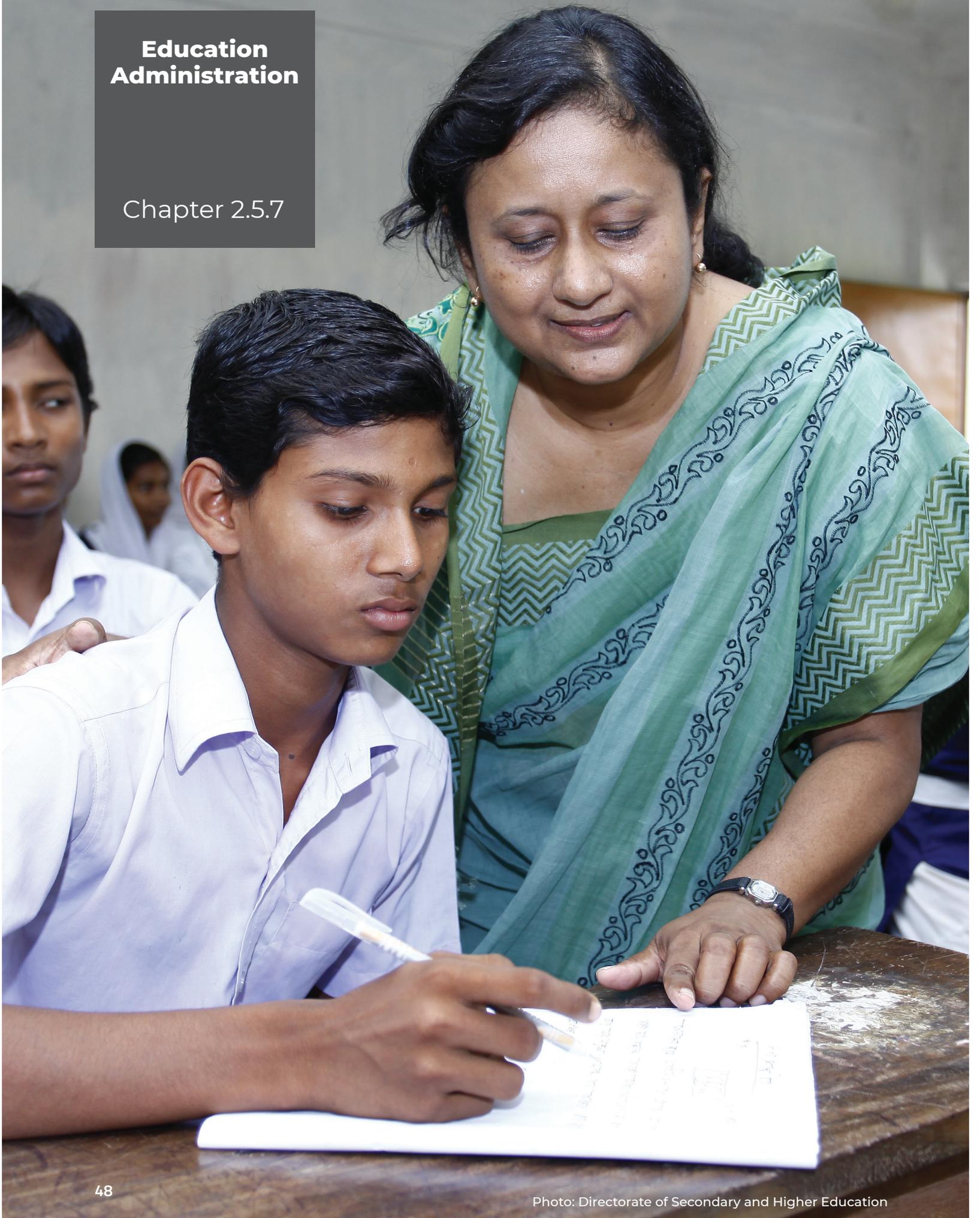
Activity	Progress
5.1	 The Higher Education Quality Enhancement Project (HEQEP) project has taken initiatives to advance automated administrative & academic activities of higher education institutions, including administration, finance & accounts, planning & development, admission & publication of results of all exams, research, recruitment, training, and purchase. Initiatives have resulted in skills development of administrative & academic staff and increased the accountability of institutions.

Objective 6: Continuation of the research activities of the universities

Activity	Progress
6.1	 Initiatives to establish a modern ICT-based Centre of Excellence in each university have yet been taken by UGC.
6.2	 Initiatives to ensure the online subscription of foreign journals of international standard have been taken by UGC and have strengthened the research work between universities.
6.3	 Despite limited funding and scope for research, several universities have taken initiatives to establish collaborative arrangements in the area of research of the universities at national and international levels.
6.4	 Considering that public and private colleges play a pivotal role in the Higher education sector of Bangladesh, moving forward, special attention needs to be given to the establishment of modern ICT-based Centres of Excellence in these institutions.

Education Administration

Chapter 2.5.7



2.5.7 Review Findings of Education Administration

Objective 1: Ensuring transparency, efficiency and accountability in education management with the use of ICT

Activity	Progress
1.1	 The Preparation and updating of policies relating to management, ownership and financing of infrastructural development of all educational institutions under MoE & MoPME has yet been fully completed. ICT Policy 2015 and guideline on the usage of multimedia are classic examples of definitive policies and guidelines that can ensure transparency in infrastructural development. Moving forward, it will be important to prepare and to implement policies on the management, ownership and financing of infrastructural development for the use of ICT equipment in education.
1.2	 The ICT Policy 2015 and the recently updated ICT Policy 2018 can be considered as part of the preparation & implementation of policies relating to the use of inexpensive, open, standardized and widely used software. It is predicted that the use of open and standardized technology will make mutual communication easier while driving down management costs.
1.3	 To facilitate an exchange of information, policies, standards, and frameworks (e.g. a common platform that allow interoperability and standardization) focusing on the existing Education Management Information System (EMIS) have yet been prepared. The development and coordination of EMIS, as well as the exchanges of information would be easier if such policies, standards, or frameworks would have been developed.
1.4	 Until today, there is no standard or framework for the development, enlargement, and coordination of Pre-Primary & Primary Education Management Information System. Access to statistics of Pre-Primary & Primary education and the preparation of plans would be easier once such a framework is developed.
1.5	 Until today, there is no standard or framework for the development, enlargement, and coordination of a Post-Primary Education Management Information System (EMIS). If the framework is developed, access to statistics of Secondary & Higher Secondary education and preparing of plans would be easier using the integrated educational database.
1.6	 Until today, there is no standard or framework for the development, enlargement, and coordination of a Non-formal Education (NFE) Management Information System (MIS). It is recommended to develop an NFE MIS as soon as possible to enhance NFE planning and programming through statistical analysis of countrywide NFE users including their unmet needs. A NFE MIS would further enable policy makers to access NFE statistics and to prepare data-informed policies and plans.
1.7	 Until today, there is no standard or framework for the development, enlargement, and coordination of a Higher Education Management Information System (MIS).
1.8	 Until today, there is no standard or framework for the development, enlargement, and coordination of a TVET Management Information System (MIS).
1.9	 Until today, there is no standard or framework for the development, enlargement, and coordination of Madrasah Education Management Information System (MIS).
1.10	 The Bangladesh Education Sector Decision Support System has yet been established.

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Activity	Progress
1.11	<p> An Office Management System has been developed in MoPME and MoE which includes:</p> <ul style="list-style-type: none"> a. Personnel Management Information System (PMIS) b. Project Management System (PMS) c. Financial Management System d. E-filing system <p>Transparency, accountability, and mobility, as well as human resource skills in the education administration have been enhanced.</p>
1.12	<p> The Office Management System under MoE and MoPME does yet include the following for Directorates and Departments:</p> <ul style="list-style-type: none"> a. Personnel Management Information System (PMIS) b. Project Management System (PMS) c. Financial Management System
1.13	<p> MoPME & MoE has taken initiatives to fully establish an Education Management Information System (EMIS) which includes:</p> <ul style="list-style-type: none"> a. Management of information of educational institutions b. Performance auditing system of educational institutions c. Standard school visit reports d. Online reporting and feedback system e. Academic supervision system f. A system that facilitates applications for the establishment of new schools, as well as the approval and inclusion of personnel in MPO. <p>As of today, more than 500,000 teachers and staff of 27,000 educational institutes are receiving their salaries through a message communication software. Both ministries are expected to be equipped with necessary information of educational institutions which would further enhance monitoring.</p>
1.14	<p> A database for learners enrolled in Primary education that provides unique learner IDs, which help the tracking of learners, is currently under development as part of the CRVS project and in coordination with the Birth Registration/National Population Register.</p> <p>Once the CRVS project has created the link between CRVS and the education sector MIS, it will be possible to conduct major analyses for the development of the education sector. Through the uniform database, it will be possible to identify non-enrolled children, to retrieve correct information on enrolled learners, to track learners post primary school at other education levels, to retrieve information on the exact dropout rates at post-primary stage, etc.</p>
1.15	<p> As part of the CRVS project, a tracking system is foreseen to be developed that issues ID cards to students at primary level, which allows the tracking of enrolled students through secondary school and thus enhances education planning.</p>

Objective 2: Providing education services at the doorsteps of the people

Activity	Progress
2.1	 Online services have been created that facilitate the admission, registration, filling up of examination forms and submission of fees (through Internet, SMS, and mobile devices). The admission and registration process have become easier and more transparent for the students.
2.2	 Results of all public exams are published on the Internet, on websites, or are shared via e-mail or SMS. This has enabled students and guardians to easily access results of public exams.
2.3	 A platform has been created for the submission of online applications for pension of teachers and employees through the IBASS system, which has made the disbursement process faster and more transparent. Teachers and other employees receive pension payments within a fixed time. Moving forward it is recommended to automate the processing and publication processes as well.
2.4	 Employment notices for the recruitment, including the receipt of applications, the sorting and final result are being published on a mobile-enabled website. As a result, recruitment processes have become more time-efficient and transparent.
2.5	 A National Education Portal, which is equipped with a certain amount of education sector information, including all documents, planning, books and digital content, has been established and regularly updated and maintained.

Objective 3: Ensuring accessibility of all to education management

Activity	Progress
3.1	 The formation and implementation of a document format and standard encoding system (BDS 1520.2011) to ensure the exact process of exchanging documents among Ministry and the Directorates, Departments, Education Boards and other offices under the Ministry has yet been implemented.
3.2	 Two frameworks have been prepared for developing, hosting and the management of a dynamic website as available in the educational institutions under MoE & MoPME under the guidance of the Access to Information (A2I) Programme. Through the frameworks, institutions are now able to build and manage their websites, which has increased coherence among websites of educational institutions, as well as has decreased costs for the preparation and management of websites.
3.3	 Dynamic websites for each educational institution have been prepared and are regularly updated. All information about education management can be accessed through an accessible and easily usable website.
3.4	 Low-cost connectivity (computer, data network, high speed Internet) has cost-effectively facilitated the exchange of information between MoE, MoPME and all offices and educational institutions. Further progress through ICT can be realized in all areas of administrative activities especially in promoting transparency in education management from Upazila to national levels.
3.5	 The development and patenting of inexpensive Bangla text processing tools (text to speech, screen reader etc.) as well as a software that enables the transmission of printed matters into audio materials for physically disabled learners and those with special needs has yet been carried out.
3.6	 The phase-wise use of open source software in all educational institutions has been encouraged. Software piracy has largely been removed by using licensed operating systems with all supplied hardware. Until today, outside metropolitan areas only a limited number of software experts are available.

Activity	Progress
3.7	 The supply of an adequate number of books on ICT to libraries of all educational institutions has yet been completed. Until today, the unavailability of ICT books in libraries creates obstacles in creating more skilled and talented ICT users.
3.8	 The phase-wise transformation of educational institutions' libraries into digital libraries with online catalogues has yet been implemented.
3.9	 The establishment of an Education Data Centre under MoE to securely conserve all information related to MoE & MoPME has yet been implemented.



Photo: Hefez Abdur Razzak Jamia Islamia Dakhil Madrasah, Azimpur, Dhaka

2.6 Other Relevant Findings

The Progress Review of the Master Plan has produced a number of important review findings that can't be directly attributed or are relevant to more than one specific objective or activity of the Master Plan:

Awareness

- Many learners and teachers are not aware of educational portals and digital content developed by the Access to Information (A2I) Programme and other agencies.
- Policy makers, administrators, and project directors are not always aware of relevant activities of the Master Plan for ICT in Education.

Infrastructure / Facilities

- The high cost and slow speed of mobile Internet is a major bottleneck limiting the use of multimedia content by rural teachers and learners. If schools were equipped with optical fiber cable Internet, teachers would feel encouraged to use more online content.
- Until today, more than eleven (11) Primary Teachers Training Institutes do not have computer labs.
- The digital divide between education institutes with electricity and those without electricity continues to increase. Moving forward, it should be a priority to equip education institutes without electricity with battery powered ICT equipment.
- Due to inadequate maintenance and only limited availability of ICT service centers in rural areas, ICT equipment is sometimes kept idle for small functional errors that could be easily repaired.
- Class room seating arrangements in rural and semi-urban education institutions are often inadequate to use ICT devices in class. As a result, ICT devices are often only used for demonstration purposes.

Training / Capacity Development

- For various reasons, it may never be possible to bring all teachers to training centers in order to train them on ICT in education. As a result, trained teachers need to be motivated and incentivized to share learned skills with fellow teachers. In addition, online education materials can be used for distance learning/training of teachers.

Coordination, Monitoring, and Updating of Master Plan for ICT in Education

- There is a need for real time reporting and monitoring of activities by field level education managers. Online reporting facilities like e-filing for correspondences between education managers and institutions shall be introduced.
- Projects undertaken by different ministries need to be coordinated in line with the Master Plan for ICT in Education.
- The Master Plan foresees that ministries review progress of the Master Plan every six months and take necessary actions if progress stalls. For various reasons, the six-monthly monitoring and coordination among concerned ministries and implementing partners has not been conducted.

3

CHAPTER 3

Challenges

Chapter 3 presents challenges faced in the implementation of the Master Plan of ICT in Education as reported by consulted stakeholders.

3 Challenges

The following challenges in implementing the Master Plan for ICT in Education were reported by consulted stakeholders during conducted Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs).

INFRASTRUCTURE

Infrastructure Facilities

Most physical structures of education institutions in semi urban and rural areas are in depleted conditions. Starting at primary level and going to higher secondary level, classrooms often do not have sufficient chairs, benches, and other seating facilities for all learners. Rural education institutions, particularly those in coastal area, hill tracks and hoar areas, often face risks from river erosion and flooding.

INFRASTRUCTURE

Internet Connectivity

Compared to metropolitan areas, present Internet speed in semi urban and rural areas is very slow. Most educational institutions rely on mobile network-based Internet services which are extremely slow and expensive.

While schools in urban areas use broadband Internet and pay according to Internet speed with unlimited data, schools in rural areas have to pay for each MB of mobile data. As a result, teachers in rural areas are less inclined to use the Internet to share digital content in multimedia classrooms.

INFRASTRUCTURE

Inadequate Electricity

According to the BANBEIS statistics, around 2,650 educational institutes do not have electricity at their premises, accounting for 7.50 percent of all educational institutions. Due to a number of Government initiatives rural electrification is improving and more institutions are getting access to electricity. However, in order to accelerate the use of ICT, it is recommended to distribute rechargeable multimedia projectors and laptops in schools without or with limited access to electricity.

INFRASTRUCTURE

Maintenance and Ensuring Availability

ICT resources provided to educational institutes need to be maintained properly. The Union Digital Center could be used as the hub to provide technical support within the union. Further, once broadband Internet is provided to UDC, UDC could act as PoP for the nearest educational institutes.

AWARENESS

Inadequate Awareness

Learners and teachers are not aware of educational portals and digital content developed by the Access to Information (A2I) Programme and other agencies. Inadequate awareness has led to non-usage of existing digital content and resources. Awareness need to be focused on all education sectors. Parents often fear bad influences of malpractices in using the Internet and mobile technology. Learners and parents should be guided in the appropriate use of technology.

QUALITY

Ensuring Quality of Education

There is a need to develop class-based and subject-based quality learning materials (including self-learning & subsidiary materials) for both teachers and students. Bangladesh has come a long way in achieving education for all, now it's time to achieve 'quality education for all'.

CAPACITY DEVELOPMENT

Capacity Development

Due to inadequate knowledge how to use ICT devices, users are often less inclined to use them. As a result, learners are deprived of using available ICT equipment including multimedia facilities and digital content. Also, knowledge acquired by training attendees after they returned to their educational institutes, needs to be better shared with colleagues. ICT capacity development of teachers, trainers, curriculum developers, and education managers needs to be improved and shall be part of ongoing capacity building Programmes.

MONITORING

Monitoring and Reporting

Due to inadequate real-time monitoring, feedback, and reporting mechanisms, education managers are not always interested in using available ICT-based systems. Progress that has been achieved in e-filing of activities need to be replicated in the grassroots level of administration. Further, the monitoring and reporting capacity of education managers needs to be strengthened through training in order to ensure maximum accountability and transparency.

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CHAPTER 4

Recommendations & Way Forward

Chapter 4 presents recommendations for future action that have emerged from the Review as well as presents the way forward.



4.1 Recommendations

The following recommendations for future action have emerged from the review of the Master Plan:

Recommendation 1

◆ **Linking Master Plan and SDG 4**

Update Master Plan to align with the 2030 Agenda for Sustainable Development, with the Sustainable Development Goals, particularly SDG 4, the Education 2030 Agenda, as well as the 7th Five Year Plan.

Recommendation 2

◆ **Baseline Survey**

Conduct a baseline survey as part of the updating of the Master Plan to ensure that baseline data is available to measure Master Plan implementation progress, including for end-line beneficiaries.

Recommendation 3

◆ **Distribution of Responsibilities**

Following the restructuring of the Ministry of Education and the establishment of two separate Divisions (SHED and TMED) as well as one new Directorate (Directorate for Madrasah Education), responsibilities in the Master Plan need to be updated.

Recommendation 4

◆ **Ensuring Regular Monitoring and Coordination of Implementation**

It is recommended to conduct regular monitoring and coordination activities to ensure the implementation of the Master Plan. When the Master Plan was formulated, it was intended that the both Ministries jointly review implementation progress every six months and take action if required.

Recommendation 5

◆ **Translating Master Plan into Action**

The Master Plan stipulates in its Preamble to be reviewed every three years with measures taken to make necessary amendments and revisions. MoE conducted a one-time review in 2014 using a self-reporting mechanism. Yet, following the review no follow-up was taken in implementing the review findings. Since 2014 implementation progress has not been assessed, and as a result, implementing ministry officials were not always able to provide an update on how much progress has been made.

It is recommended that moving forward, regular reviews are undertaken, and relevant agencies and responsible personnel is assigned to the implementation of the Master Plan.

Recommendation 6

◆ Mapping of Existing Resources and Maximize Utilization

The review of the Master Plan has shown that a large number of Government agencies are implementing different activities of the Master Plan, and in pursuit of the goals and targets of SDG 4. However, not all concerned officials of relevant Government agencies are fully aware of the Master Plan itself. Moving forward, it is recommended to map existing resources and to conduct more coordination and coherence efforts in order to maximize the utilization of resource.

Recommendation 7

◆ Ensuring Inclusiveness to Avoid Digital Divide

It is recommended to take appropriate measures to provide educational institutions with equal access to ICT resources (i.e. facilities and connectivity) in order to minimize the growing digital divide between urban and rural, and between secondary, technical, and Madrasah institutions.

Recommendation 8

◆ Online Reporting and Monitoring

To ensure transparency, efficiency, and accountability in educational management, online reporting and monitoring tools need to be used and data sharing among different focal agencies has to be actively pursued.

Recommendation 9

◆ Cooperation with UNESCO

UNESCO generously extends their offer for continued cooperation with and support of the Ministry of Education and the Ministry of Primary and Mass Education, including for updating the Master Plan for ICT in Education. To benefit from UNESCO's global expertise in ICT in Education, it is recommended to partner with UNESCO for the updating of the Master Plan.

4.2 Way Forward

The implementation of the Master Plan is contributing to achieving Bangladesh's Vision 2021 of building a digitally enabled knowledgeable, fair, and just society in Bangladesh. Providing access to ICT equipment and learning content, both to teachers and learners, is not only enhancing transparency and accountability, but provides better and more equal learning opportunities for all people living in Bangladesh.

In order to achieve the ambitious vision and goals of the Master Plan for ICT in Education by 2021, more initiatives need to be taken by all stakeholders. Concerned Government entities need to ensure coordination among activities as well as need to share experience and allocate resources for the sustainable use of modern and economic technology in education.

Further, the Master Plan needs to be updated and aligned with the Sustainable Development Agenda.

Annex

The following documents can be found in the Annex of this Review Report.

Annex 1: Current Status of Activities

An Overview of the current status of implementation of activities vis-à-vis expected results of the Master Plan for ICT in Education.

Annex 2: List of People Interviewed for the Review

A list of stakeholders that have been interviewed during Key Informant Interviews (KIIs) with Government stakeholders for the Review of the Master Plan for ICT in Education.

Annex 3: Key Informant Interview (KII) Discussion Topics

An Overview of discussion topics and questions that have been used during Key Informant Interviews (KIIs) with Government stakeholders for the Review of the Master Plan for ICT in Education.

Annex 4: Focus Group Discussion (FGD) Guidelines

An Overview of questions and topics that were addressed during conducted Focus Group Discussions (FGDs) with teachers and students as part of the Review of the Master Plan for ICT in Education.

Annex 5: Resources used during Desk Review

An Overview of resources that were consulted and analyzed during the Desk Review, which was conducted as part of the Review of the Master Plan for ICT in Education.

Annex 1: Current Status of Activities

As part of the Review of the Master Plan, Departments within the Ministries of Education and the Ministry of Primary and Mass Education who are responsible for the implementation of the Master Plan were contacted and updates on implementation activities in pursuit of the Master Plan collected. Below is the list of responses received from Departments.

A. Pre-Primary and Primary Education

Activity	Time Limit to Start	Department's Response
1.1 Inclusion of ICT in education at Pre-Primary level.	2013	Ongoing
1.2 Inclusion of ICT in education at the Primary level.	2013	Ongoing
1.3 Developing & updating books on ICT in every 3 years to enhance the appropriate ICT skills of the learners.	2013	Ongoing
1.4 Supplying books on ICT (in easy Bangla language) in the library of each educational institution.	2012	Not Initiated Yet
2.1 Inclusion of basic ICT materials (such as preparing digital content with basic computer, multi-media, Internet, presentation software) in the curriculum of teachers' training.	2012	Not Initiated Yet
2.2 Preparing Master Trainers of sufficient number for coordination of ICT in teaching-learning in the Pre-primary & Primary classes to provide training on the use of ICT to develop class-wise materials for teaching-learning.	2013	Ongoing
2.3 Provision of quality in-service training for all teachers of primary schools to help them acquire basic skills in ICT; use of ICT in teaching-learning methods and developing learning materials through ICT.	In progress	Ongoing
2.4 Introduction of distance learning Programme through radio, television & Internet to facilitate conducting of learning Programmes to develop the professional skills of the Primary school teachers.	2013	Ongoing
2.5 Developing online course content/modules for teachers' training.	2013	Initiatives Already Taken
2.6 Organization of exams of online courses in teachers' training; recognition & delivery of certificates.	2013	Ongoing
2.7 Provision of interest-free loans on easy terms /grants to the teachers to help purchase computer/ laptop & ICT materials.	2013	Ongoing
3.1 Developing class-wise & subject-based interactive multimedia learning materials (including self-learning, subsidiary materials) jointly by teachers, experts in materials development and specialists in education.	2013	Ongoing
3.2 Preparing & distribution of subject- based audio and video materials for model class Programmes to be prepared jointly by teachers, experts in materials development and specialists in education.	2014	Not Initiated Yet
3.3 Recognition & Award of prizes for developing ICT-based quality teaching-learning materials	2013	Not Initiated Yet
3.4 Inclusion of all text-books, subsidiary materials and digital content into the national education portal.	2012	Ongoing
2.5 Developing online course content/modules for teachers' training.	2013	Initiatives Already Taken
2.6 Organization of exams of online courses in teachers' training; recognition & delivery of certificates.	2013	Ongoing
2.7 Provision of interest-free loans on easy terms /grants to the teachers to help purchase computer/ laptop & ICT materials.	2013	Ongoing
3.1 Developing class-wise & subject-based interactive multimedia learning materials (including self-learning, subsidiary materials) jointly by teachers, experts in materials development and specialists in education.	2013	Ongoing
3.2 Preparing & distribution of subject- based audio and video materials for model class Programmes to be prepared jointly by teachers, experts in materials development and specialists in education.	2014	Not Initiated Yet

Activity	Time Limit to Start	Department's Response
3.3 Recognition & Award of prizes for developing ICT-based quality teaching-learning materials	2013	Not Initiated Yet
3.4 Inclusion of all text-books, subsidiary materials and digital content into the national education portal.	2012	Initiatives Already Taken
4.1 Establishment of ultra-modern ICT labs in all Primary Teachers Training Institutes to enhance the basic ICT skills of the teachers.	2012	Initiatives Already Taken
4.2 Installation of faster Internet connection at each PTI.	2012	Ongoing
4.3 Establishment of ICT libraries equipped with national and international books, journals and periodicals on ICT.	2013	Not Initiated Yet
4.4 Establishment of a multi-media classroom with laptop, multi-media projector/LCD screen, Internet connection at each educational institution for the use of ICT in education; Arrangement of substitute power source in case of no regular power supply.	2015	Ongoing
4.5 Each classroom of all educational institutions be turned into a multi-media classroom for the use of ICT in education.	2018	Not Initiated Yet
4.6 Establishment of ICT labs at each educational institution with adequate number of computer/laptops and Internet connection for use of ICT in education.	2018	Ongoing
4.7 Formulation of policies/planning for the supply, use and maintenance of ICT materials & involvement of the Management Committees/community.	2012	Not Initiated Yet
4.8 Preparation of quality instructional programs for screening on the television.	2013	Ongoing

B. Non-Formal Education

Activity	Time Limit to Start	Department's Response
1.1 Inclusion of ICT in the NFE curriculum and development of ICT-based materials with special reference to continuing & skill development education to create opportunities of the learners to acquire required skills as per their needs.	2014	Ongoing
1.2 Coordination of ICT in various skill development courses so that learners acquire efficiency in ICT along with other subjects and become profited through its use in everyday life.	2013	Ongoing
1.3 Developing an independent trade course on ICT.	2012	Ongoing
2.1 At the first phase, establishment of a permanent NFE Learning Centre in collaboration with UISC in each union, equipped with ICT facilities (such as 1 TV, radio, Internet connection, computer/laptop and multi-media projector/LCD screen).	2015	Ongoing
2.2 At the second phase, establishment of a permanent NFE Learning Centre in collaboration with UISC in each village, equipped with ICT facilities (such as 1 TV, radio, Internet connection, computer/laptop and multi-media projector/LCD screen).	2018	Not Initiated Yet
2.3 Broadcasting of attractive programs on adult education and other NFE areas on radio and TV.	2012	Ongoing
2.4 Broadcasting of interactive programs on adult education on radio and TV.	2013	Not Initiated Yet
2.5 Organizing monitoring activities of the interactive programs at regular intervals.	2013	Not Initiated Yet
2.6 Orientation & motivation of prospective makers of quality programs for radio and TV on adult education and NFE.	2012	Not Initiated Yet
2.7 Initiating Early Childhood Development Programme (ECDP) with the help of multi-media materials prepared specially for the poor, slow, disadvantaged children and those living in the distant areas.	2016	Not Initiated Yet
3.1 Development of subject- based interactive multi-media learning materials (including self-learning & subsidiary materials) to be prepared jointly by teachers, experts in materials development and specialists in education.	2012	Not Initiated Yet

Activity	Time Limit to Start	Department's Response
3.2 Arrangement of training for the teachers/assistants of NFE through the use of ICT.	2013	Not Initiated Yet
3.3 Recognition & Award of prizes for developing ICT-based quality teaching-learning materials for NFE.	2012	Not Initiated Yet
3.4 Inclusion of all NFE text-books & subsidiary digital content in the national education portal.	2012	Ongoing

C. Secondary and Higher Secondary Education

Activity	Time Limit to Start	Department's Response
1.1 Developing and updating of the books and curriculum of these levels at every three years to make them appropriate to the updated needs in order to develop the ICT skills of these learners.	2013	Ongoing
1.2 Supply of books (both in Bangla and English) on ICT in the libraries of all educational institutions.	2012	Ongoing
1.3 Ensuring appointment of teachers of ICT who are graduates or diploma-holders in ICT.	2016	Ongoing
2.1 Inclusion of the basic elements of ICT (such as computer, multi-media, Internet, presentation software, developing digital content) in the curriculum of teacher training.	2012	Ongoing
2.2 Coordination of ICT teaching-learning within the classroom at secondary & higher secondary levels and developing adequate number (at least 1000) master trainers to train persons in developing subject-based teaching-learning materials for different classes.	2013	Ongoing
2.3 Inclusion of all the teachers (approx. 300,000) at the secondary level to develop their basic skills in ICT & use of ICT in the teaching-learning curriculum & Provision of quality pre-service and in-service training in developing learning materials with ICT.	2016	Ongoing
2.4 Introduction of courses on distance education through radio, TV and Internet to develop teachers' professional skills and help them conduct programs on learning.	2012	Ongoing
2.5 Recognition & Certification of online courses on teachers' training or any kind of learning.	2013	Not Initiated Yet
2.6 Developing online course content/modules for teachers' training.	2013	Ongoing
2.7 Arrangement of online examinations and awards; recognition & certification of such exams.	2013	Not Initiated Yet
3.1 Development of class-based & subject- based multi-media learning materials (including self-learning & subsidiary materials) to be prepared jointly by teachers, specialists in materials development and specialists in education.	2013	Ongoing
3.2 Preparing & distribution of videos of subject-based models for classroom use, to be prepared by teachers, experts in teaching-learning materials and specialists in education.	2013	Ongoing
3.3 Recognition & award of prizes for developing ICT-based quality teaching-learning materials.	2012	Ongoing
3.4 Ensuring of the use and development of subsidiary education materials that can meet the needs of slow and disadvantaged learners.	2014	Initiatives Already Taken
3.5 Preparing subsidiary education materials for physically & mentally challenged learners (such as text to speech, screen reader etc.).	2014	Initiatives Already Taken
3.6 Inclusion of all textbooks and subsidiary digital content in the national education portal.	2014	Ongoing
4.1 Establishment of ultra-modern ICT labs in the Teachers Training Institutes to develop the basic ICT skills of teachers.	2013	Initiatives Already Taken
4.2 Installing high speed Internet at each Teachers Training Institute.	2013	Not Initiated Yet
4.3 Establishing ICT libraries equipped with national/international publications, periodicals and journals in the Teachers Training Institutes.	2013	Ongoing

Activity	Time Limit to Start	Department's Response
4.4 Establishment of an electronic library with intercom facilities in all Teachers Training Institutes and having connectivity with the global research network.	2013	Initiatives Already Taken
4.5 Infrastructural development of the TTCs to facilitate training programs through video conference.	2013	Not Initiated Yet
4.6 Establishment of a multi-media classroom with 1 laptop, 1 multi-media projector/LCD screen, Internet connection at each educational institution for the use of ICT in education; Arrangement of substitute power source in case of no regular power supply.	2013	Ongoing
4.7 Transforming all classrooms into multi-media classrooms for the use of ICT.	2016	Initiatives Already Taken
4.8 Establishment of ICT labs in each educational institution with adequate number of computer/laptop & Internet connection for the use of ICT in education.	2016	Not Initiated Yet
4.9 Inclusion of all educational institutions under Bangladesh Research and Education Network (BdREN).	2015	Ongoing
4.10 Formulation of policies/planning for the supply, use and maintenance of ICT materials & involving the Management Committees/community.	2012	Initiatives Already Taken
4.11 Regular telecasting of educational programs on Sangsad TV.	2012	Not Initiated Yet
4.12 Preparing quality programs for screening on TV.	2012	Ongoing
4.13 Starting of new TV channels with assistance from the government for telecasting educational programs.	2020	Initiatives Already Taken
4.14 Creation of a national educational portal for exchange of all materials and inclusion of all such teaching-learning materials into it.	2012	Not Initiated Yet
4.15 Supply of books on ICT (both in Bangla & English) in the libraries of all educational institutions.	2012	Ongoing
4.16 Building up one model school at every union as an information access centre (from where teachers and students of neighboring villages can access ICT facilities).	2014	Not Initiated Yet
4.17 Establishment of Bangladesh ICT in Education Research Centre (BIERC) under MoE; activities of BIERC can start within the infrastructural facilities of BANBEIS.	2013	Ongoing

D. Madrasah Education at Secondary & Higher Secondary Levels

Activity	Time Limit to Start	Department's Response
1.1 Updating of curriculum/course content and textbooks for Madrasah education relating to ICT in education at every three years to enhance the skills of learners in the use of ICT in the modern times.	2012	Ongoing
1.2 Ensuring recruitment of ICT graduates or at least diploma-holders as teachers for ICT instruction.	2016	In Planning Stage
2.1 Inclusion of ICT materials in the teachers' training curriculum for the Madrasah teachers to enhance their skills (such as developing digital content through basic computer, multimedia, Internet, presentation software etc.).	2012	Ongoing
2.2 Creating, for the secondary level, master trainers of adequate number (at least 400) so that they can coordinate the teaching-learning activities in ICT within the classroom and train teachers in developing class-based teaching-learning materials.	2012	Ongoing
2.3 Provision of quality pre-service and in-service training for all Madrasah teachers at the secondary level to help them acquire primary skills in ICT to enable them to apply ICT in teaching-learning activities and develop relevant materials(Arrangement of such trainings at TTC, HSTTI, NAEM and BANBEIS till new BMTTIs are established).	2015	Ongoing
2.4 Introduction of Distance Learning Courses for the training of Madrasah teachers with the use of ICT	2013	Not Initiated Yet

Activity	Time Limit to Start	Department's Response
2.5 Provision of interest-free loan on easy conditions/grant to help teachers procure computer/laptop and ICT materials.	2013	Not Initiated Yet
3.1 Developing class-based and subject-based multimedia learning materials (including self-learning and subsidiary items) by teachers, experts on materials development and specialists in education.	2013	Ongoing
3.2 Preparing and distribution of videos on subject-based model class activities by teachers, experts on materials development and specialists in education.	2013	Ongoing
3.3 Recognition and giving of awards in appreciation of developing ICT-based quality teaching-learning materials.	2012	Ongoing
3.4 Ensuring the preparation of such subsidiary education materials that can meet the needs of slow and disadvantaged learners.	2014	Ongoing
3.5 Preparing such supplementary technology and materials (such as text to speech, screen reader etc.) that can meet the needs of physically and mentally challenged learners.	2014	Ongoing
3.6 Preparing self-learning subsidiary materials for the learners.	2014	Under Process
3.7 Inclusion of all textbooks and subsidiary digital content into the national education portal.	2014	Initiatives Already Taken
4.1 Establishment of a ICT lab at Bangladesh Madrasah Teachers Training Institute (BMTTI).	2013	Ongoing
4.2 Establishment of ICT labs, at phases, at all madrasahs with at least 20 computers/laptops.	2016	Initiatives Already Taken
4.3 Establishment of a multi-media classroom with 1laptop, 1multi-media projector/LCD screen, Internet connection at each Madrasah for the use of ICT in education; Arrangement of substitute power source in case of no regular power supply.	2013	Ongoing
4.4 Transforming all Madrasah classrooms into multi-media classrooms for the use of ICT in education.	2016	Not Initiated Yet
4.5 Formulation of policies/planning for the supply materials, use and maintenance of ICT & involving the SMCs/community in the process.	2012	Not Initiated Yet

E. Technical & Vocational Education at Secondary & Higher Secondary Levels

Activity	Time Limit to Start	Department's Response
1.1 Updating the books and curriculum/course content of technical & vocational education at every three/five years with an eye to the global market (outsourcing & others) in order to develop the learners' ICT skills that are appropriate to the needs of modern times.	2013 onward	Ongoing
2.1 Inclusion of ICT materials (such as developing of digital content through basic computer, multimedia, Internet, presentation software etc.) in the curriculum of teacher training to enhance the basic skills of teachers.	2012	Ongoing
2.2 Creating, for technical & vocational education, master trainers of adequate number (at least 100), for the coordination of teaching-learning within the classroom and training of teachers in developing class-based ICT teaching-learning materials for all classes.	2013	Ongoing
2.3 Provision of pre-service and in-service training for all teachers to help them acquire primary skills in ICT to enable them to apply ICT in teaching-learning activities and develop relevant materials.	2015	Ongoing
2.4 Provision of interest-free loan on easy conditions/grant to the teachers to help buy computer/laptop and ICT materials.	2012	Ongoing
3.1 Developing class-based and subject-based multimedia learning materials (including self-learning and subsidiary items) by teachers and experts in materials development.	2013	Ongoing
3.2 Preparing of videos on subject-based model class activities, developed by teachers & experts on learning materials.	2013	Ongoing

Activity	Time Limit to Start	Department's Response
3.3 Recognition and giving of awards in appreciation of developing ICT-based quality teaching-learning materials.	2012	Ongoing
3.4 Ensuring the preparation and use of such subsidiary education materials that can meet the needs of slow and disadvantaged learners.	2013	Ongoing
3.5 Preparing supplementary technology and materials (such as text to speech, screen reader etc.) for the physically and mentally challenged learners.	2014	Ongoing
3.6 Inclusion of all textbooks and subsidiary digital content into the national education portal.	2014	Ongoing
4.1 Establishment of an ICT lab in each technical school and college (TSC).	2013	Ongoing
4.2 Establishment of an ICT lab in each Vocational Teachers Training Institute (VTI).	2013	Ongoing
4.3 Establishment of an ICT lab in each Technical Teachers Training College (TTTC).	2012	Ongoing
4.4 Establishment of an ICT lab in each Engineering College.	2012	Ongoing
4.5 Establishment of an ICT lab in each Polytechnic Institute.	2013	Ongoing
4.6 Equipping each classroom and lab of each technical school & college with multimedia facilities (such as laptop, multimedia projector and Internet connection).	2012	Ongoing
4.7 Equipping each classroom and lab of each Vocational Teachers Training Institute (VTI) with multimedia facilities (such as laptop, multimedia projector and Internet connection).	2012	Initiatives Already Taken
4.8 Equipping each classroom and lab of each Teachers Training Institute (TTTC) with multimedia facilities (such as laptop, multimedia projector and Internet connection).	2012	Initiatives Already Taken
4.9 Equipping each classroom and lab of each Engineering College with multimedia facilities (such as laptop, multimedia projector and Internet connection).	2012	Initiatives Already Taken
4.10 Equipping each classroom and lab of each Polytechnic Institute with multimedia facilities (such as laptop, multimedia projector and Internet connection).	2013	Initiatives Already Taken
4.11 Preparing online catalogue in the libraries of each institution of Vocational & Technical education and creating therein facilities of online services like searching, requisition etc.	2015	Initiatives Already Taken
4.12 Transforming the important collection of books and journals of the libraries of each institution of Technical & Vocational education into digital formats.	2015	Ongoing
4.13 Publishing any new item into the digital format and inclusion and preservation of every publication in the digital library.	2020	Initiatives Already Taken
4.14 Creating a placement cell for the graduates of Bangladesh Technical Education Board in order to assist and provide them with necessary services.	2013	Ongoing
4.15 Assessment of the demand of technical human resource for national and international industrial houses and creation of a MIS.	2015	Not Initiated Yet
4.16 Developing the EMIS for the exchange and supply of different information regarding technical and vocational education.	2013	Ongoing

F. Higher Education

Activity	Time Limit to Start	Department's Response
<p>1.1 Provision of ICT opportunities in the institutions of higher education would require:</p> <ul style="list-style-type: none"> a) multimedia facilities in all classrooms; b) computer facilities with high speed Internet connection in the seminar libraries of each department; c) establishment of ICT lab with computer of advanced technology, other ICT materials and connection of high speed Internet to facilitate practical lessons; d) creating opportunities of "remote lab" at the university level; e) if necessary, provision of high speed wireless Internet connection in each institution; f) establishment of necessary number of Internet browsing centres for use of the students; g) Providing computer with Internet connection to all teachers; h) establishment of powerful ICT support cell/help desk; recruitment of skilled manpower for repairing, providing of services and maintenance of ICT materials i) ensuring free Internet services for the teachers and students of all higher education institutions 	2015	Ongoing
<p>1.2 Establishing digital library in each institution of higher education</p> <p>Phase-I</p> <ul style="list-style-type: none"> a) preparing online catalogues for central & departmental libraries of all higher education institutions b) preparing all catalogues in accordance with the open standard i.e. MARC so that these can be interchanged c) developing provision of online services in the libraries of these institutions d) connecting libraries of all higher education institutions with the digital library of University Grants Commission <p>Phase-II</p> <ul style="list-style-type: none"> a) transmittal of books and journals of the central & departmental libraries of higher education institutions into the digital format b) each publication of any higher education institution to be made available simultaneously in printed & digital versions c) each digital publication has to be put into the accession and preservation process of the digital libraries of the universities. 	2015	Not Done Yet
<p>1.3 Following opportunities to be created in Bangladesh Open University (BOU) for conducting ICT-based distance learning programme</p> <ul style="list-style-type: none"> a) establishing connectivity of the central campus of BOU with all regional offices to run the countrywide education programme b) provision of separate radio & TV channel for BOU education programs c) provision of interactive virtual classrooms and creating facilities of web-based lecture presentation to realize the objectives of teaching d) creating teaching facilities through TV with the use of ICT tools and 'mobile' technology e) establishing a teaching method with Internet radio f) automation of BOU to make its academic and administrative activities more radical, transparent and efficient g) ensuring high speed Internet connection h) provision of special training for the teachers of BOU to enable them to use ICT and educational tools & digital content i) introduction of online education program. 	2016	Ongoing
<p>1.4 Creating opportunities of video conferencing, centrally as well as departmentally at the higher education institutions.</p>	2015	Ongoing

Activity	Time Limit to Start	Department's Response
2.1 Provision of training for teachers on the use of ICT in education to enhance their professional skills. To realize this, it is imperative on the part of UGC (for teachers of the universities) and for National University (for the college teachers) to establish 2 training institutes which can deliver the following facilities: a) Creating opportunities for the basic ICT skills b) introduction of some special courses on improved delivery and teaching methods for the teachers to enable them to use ICT in the classroom (such as, power-point presentation, general animation, searching various educational materials on the Internet and putting these to use) that will have positive effects on teaching methods c) creating opportunities on training on video conferencing d) encouraging skill development on digital instructional design through workshop & seminar e) arrangement of special training on preparing digital content.	2015 (in progress)	Ongoing
2.2 Encouraging teachers to develop ICT-based materials through a) arrangement of special seminar/courses/ workshop on digital instructional design b) creating a repository of existing digital educational materials c) award of prizes on the development of digital educational materials for higher education	2018	Ongoing
3.1 Ensuring the standard of quality of the digital education materials.	2015	Ongoing
3.2 Enhancing teaching-learning standards through exchange of education materials & curriculum with higher education institutions of other countries.	2015	Ongoing
4.1 Establishing mutual contacts with national/international higher education institutions through ICT to facilitate and encourage exchange of new knowledge and ideas.	2015	Ongoing
4.2 Use of ICT to establish liaison between higher education institutions and industries and to create human resource as per the needs of the later.	2015	Ongoing
4.3 Establishment and maintenance of a common platform or "Community of Practice" for exchange of teachers' knowledge & innovation.	2015	Not Initiated Yet
5.1 Bringing in the administrative & academic activities of higher education institutions under automation or a computerized system, which will include administration, finance & accounts, planning & development, admission & publication of results of all exams, research, recruitment, training, purchase etc.	2015	Ongoing
6.1 Establishing a modern ICT-based Centre of Excellence in each university.	2015	Not Done Yet
6.2 Ensuring online subscription of foreign journals of international standard	2020	Ongoing
6.3 Establishing collaborative arrangements in the area of research of the universities at national and international levels.	2020	Ongoing

G. Education Administration

Activity	Time Limit to Start	Department's Response
1.1 Infrastructural development of all the educational institutions under MoE & MoPME; Preparing & updating of policies relating to management, ownership and financing in this regard.	June, 2012	Ongoing
1.2 Preparing & implementation of policies relating to the use of inexpensive, open, standardized and widely used software.	2012	Ongoing
1.3 Preparing policies/ standards/ framework (common platform, interoperability and standardization) of existing Education Management Information System (EMIS) to make exchanges of information easier.	June, 2012	Ongoing
1.4 Development, enlargement and coordination of the Pre-Primary & Primary Education MIS on the basis of accepted standard/framework.	2012	Framework Not Initiated Yet
1.5 Development, enlargement and coordination of the MIS of Post-Primary Education on the basis of accepted standard/framework.	2013	Framework Not Initiated Yet
1.6 Development, enlargement and coordination of the MIS of NFE on the basis of accepted standard/framework.	2013	Framework Not Initiated Yet
1.7 Development, enlargement and coordination of the MIS of Higher Education on the basis of accepted standard/framework.	2012	Framework Not Initiated Yet
1.8 Development, enlargement and coordination of the MIS of TVET on the basis of accepted standard/framework.	2013	Framework Not Initiated Yet
1.9 Development, enlargement and coordination of the MIS of Madrasah Education on the basis of accepted standard/framework.	2013	Framework Not Initiated Yet
1.10 Establishment of Bangladesh Education Sector Decision Support System.	2014	Not Initiated Yet
1.11 Building up an effective and high-tech office management system in MoPME and MoE that will include: a) Personnel Management Information System (PMIS) b) Project Management System (PMS) c) Financial Management System d) e-filing system	2012	Ongoing
1.12 Building up an effective and high-tech office management system in the Directorates and Departments under MoE and MoPME that will include: a) Personnel Management Information System (PMIS) b) Project Management System (PMS) c) Financial Management System	2013	Ongoing
1.13 Establishment of Education Institution Management System (EMIS) in MoPME & MoE that will include: a) management information of the educational institutions b) performance auditing system of the educational institutions c) standard school visit report d) online reporting and feedback system e) academic supervision system f) system related to applications for establishing new schools, approval and inclusion of personnel in MPO	2013	Ongoing
1.14 Preparation of a database for the learners enrolled in Primary education in coordination with birth registration/National Population Register and provision of a unique learner ID that helps to track them later on.	2013	Not Initiated Yet
1.15 Initiating the tracking system for students enrolled at the secondary schools with the help of the IDs issued to them at the primary level.	2013	Not Initiated Yet
2.1 Creating online services for all students for admission, registration, filling up of exam. forms and submission of fees (through Internet, SMS and mobile devices).	2012	Ongoing
2.2 Publication of the results of all public exams on the Internet, website, e-mail and SMS on the mobile phones.	2013	Ongoing

Activity	Time Limit to Start	Department's Response
2.3 Provision of online applications, processing and publication of results in matters of pension of the teachers and employees to make the disbursement process transparent and speedy.	2012	Ongoing
2.4 Online publication of employment notice for recruitment, receipt of applications, sorting and final result (which can be accessed on the mobile phone).	2012	Ongoing
2.5 Establishment, regular updating & maintaining of a National Education Portal (with blog facilities) equipped with all information on the education sector of Bangladesh including all documents, planning, books and digital content.	2013	Ongoing
3.2 Preparing a framework for developing, hosting and management of a dynamic website enabled for use in all devices as available in the educational institutions under MoE & MoPME.	2012	Ongoing
3.3 Preparing and regular updating of the dynamic website of each educational institution on the basis of the framework in use.	2012	Ongoing
3.4 Provision of low-cost connectivity (computer, data network, high speed Internet) meant to facilitate exchange of information among MoE, MoPME and all offices and educational institutions under them.	2013	Ongoing
3.5 Developing and patenting of inexpensive Bangla text processing tools (text to speech, screen reader etc.) and a software that enables transmitting of printed matters into audio materials in view of the requirement of the physically disabled learners and those with special needs.	2015	Ongoing
3.6 Initiating the phase-wise use of open source software in all educational institutions.	2016	Ongoing
3.7 Supply of adequate number of books on ICT to the libraries of all educational institutions.	2012	Ongoing
3.8 Phase-wise transforming of the libraries of the educational institutions into digital ones with online catalogues.	2015	Ongoing
3.9 Establishment of an Education Data Centre under MoE to securely conserve all information related to MoE & MoPME.	2014	Ongoing

Annex 2: List of People Interviewed for the Review

The following stakeholders were interviewed for the Review of the Master Plan:

Organization	Persons Interviewed
Access to Information Programme (A2I Programme)	Faruque Ahmed, E-learning Specialist Md. Afzal Hossain Sarwar, Policy Specialist (Education Innovation)
Bangladesh Bureau of Educational Information and Statistics (BANBEIS)	Md. Abu Taher Khan, Sr. Systems Analyst Md. Mezanur Rahaman, Programmer
Bangladesh Madrasah Education Board (BMEB)	Professor A.K.M. Saif Ullah, Chairman Md. Shabbir Ahmed, Controller of Publications Muhammad Amir Uddin, Officer-in-Charge (ICT Cell)
Bureau of Non Formal Education (BNFE)	Murshida Begum, System Analyst Mohammad Rukunuddin Sarker, Deputy Director (Planning & Monitoring)
Campaign for Popular Education (CAMPE)	K M Enamul Hoque, Deputy Director
Directorate of Madrasah Education (DME)	Shafiuddin Ahmed, Director General (Additional Secretary)
Directorate of Primary Education (DPE)	Md. Badiar Rahman, Director of IMD (Joint Secretary) Md Osman Goni, Programmer
Directorate of Secondary and Higher Education (DSHE)	Dr. Mohammed Jahangir Hossain, Director (Planning and Development), Professor of Accounting
Directorate of Technical Education (DTE)	Md Wahidul Islam, Joint Secretary, Director (Admin) Dr. Shanti Ranjan Sarkar, Officer in Charge (ICT Cell)
ICT Division	Mst. Aspia Aktar, Deputy Chief
Secondary and Higher Education Division (SHED), Ministry of Education	Md. Mofakkharul Islam, Senior System Analyst
Technical and Madrasah Education Division (TMED), Ministry of Education	Md. Lutfur Rahman, Programmer
University Grants Commission (UGC)	Mohammad Maksudur Rahman Bhuiyan, Additional Director/Deputy Chief Engineer

Annex 3: Key Informant Interview Discussion Topics

The following list of questions and topics were addressed during conducted Key Informant Interviews (KIIs) with Government stakeholders:

1. Ministry of Primary and Mass Education (MoPME)

- Initiatives taken to make Bangladesh free of illiteracy by 2014.
- Initiatives taken for the development of teaching- learning materials at primary education level;
- Initiatives taken for the development of professional skills of the teachers, making the teaching-learning Programmes more effective at primary education level;
- Initiatives taken for ensuring of e-services at primary education level sector;
- Nationwide facilities established at primary educational institutions to remove digital divide.
- List of activities that have been coordinated by the Ministry for sharing of experiences and resource;
- Frequency of review in every six months and initiatives taken to keep pace with time line of the Master Plan;
- Projects undertaken for achieving different targets of the Master Plan for ICT in Education.

2. Secondary and Higher Education Division (SHED) of Ministry of Education (MoE)

- Initiatives taken for the development of teaching- learning materials at secondary and higher education level;
- Initiatives taken for the development of professional skills of the teachers, making the teaching-learning Programmes more effective at secondary and higher education level;
- Initiatives taken for ensuring e-services at secondary and higher education sector;
- Nationwide facilities established at secondary and higher education institutions to remove digital divide;
- List of activities that have been coordinated by two divisions for sharing of experiences and resource;
- Frequency of review in every six months and initiatives taken to keep pace with time line of the Master Plan;
- Projects undertaken for achieving different targets of the Master Plan for ICT in Education.

3. Technical and Madrasah Education Division (TMED) of Ministry of Education (MoE)

- Initiatives taken for the development of teaching- learning materials at technical and Madrasah education level;
- Initiatives taken for the development of professional skills of the teachers, making the teaching-learning Programmes more effective at technical and Madrasah education level;
- Initiatives taken for ensuring e-services at technical and Madrasah education sector;
- Nationwide facilities established at technical and Madrasah educational institutions to remove digital divide.
- List of activities that have been coordinated by two divisions for sharing of experiences and resource;
- Frequency of review in every six months and initiatives taken to keep pace with time line of the Master Plan;
- Projects undertaken for achieving different targets of the Master Plan for ICT in Education.

4. ICT Division

- Initiatives taken for developing skilled manpower in ICT;
- Nationwide facilities established at different educational institutions to remove digital divide.
- Projects undertaken for achieving different targets of the Master Plan for ICT in Education.
- Preparation & implementation of policies relating to the use of inexpensive, open, standardized and widely used software.
- Preparing policies/ standards/ framework (common platform, interoperability and standardization) of existing Education Management Information System (EMIS) to make exchanges of information easier.
- Creating provision of low-cost connectivity (computer, data network, high speed Internet) meant to facilitate exchange of information among MoE, MoPME and all offices and educational institutions under them.
- Developing and patenting of inexpensive Bangla text processing tools (text to speech, screen reader etc.) and software that enables transmitting of printed matters into audio materials in view of the requirement of the physically disabled learners and those with special needs.
- Initiating the phase-wise use of open source software in all educational institutions.

5. Directorate of Primary Education (DPE)

- Provision of ICT in education, appropriate to the needs of time, for the learners at primary level;
- Initiatives taken for developing the professional skills of teachers through ICT;
- Initiatives taken for developing teaching-learning materials with the use of ICT;

- Initiatives taken for creating learner-friendly environment through infrastructural development of ICT;
- Initiatives taken for building up skilled manpower through the use of ICT in Non-Formal Education;
- Initiatives taken for creating access of common people to NFE through the use of ICT;
- Initiatives taken for improvement of NFE with the use of ICT;
- Initiatives taken to eradicate Digital Divide/ Discrimination at primary and Non-Formal Education sector.
- Initiatives taken to ensure safe and effective use of technology at primary and Non-Formal Education sector.

6. Directorate of Secondary and Higher Education (DSHE)

- Initiatives taken for ensuring transparency, efficiency and accountability in education management with the use of ICT;
- Initiatives taken for providing education services at the doorsteps of the people;
- Initiatives taken for ensuring accessibility of all to education management;
- Initiatives taken for the creation of a national educational portal for exchange of all materials and inclusion of all such teaching-learning materials into it;
- Incentives introduced by the department to ensure effective use of ICT.
- Initiatives taken to ensure safe and effective use of technology at secondary and higher education sector.
- Initiatives taken to eradicate Digital Divide/ Discrimination at secondary and higher education sector.

7. University Grants Commission (UGC)

- Initiatives taken for the use of ICT for development and creation of opportunities at higher education institutions;
- Initiatives taken for increasing the use of ICT to enhance the professional skills of the teachers to meet the needs of the fast-changing society in this age of globalization;
- Initiatives taken for coordination of ICT to upgrade the standard of teaching-learning up to the international level;
- Initiatives taken for ensuring the use of ICT to encourage creation of new and fresh knowledge and exchanges thereof;
- Initiatives taken for ensuring proper use of ICT with the objective of making the administrative & academic activities of the higher education institutions more radical, transparent and efficient;
- Initiatives taken for continuation of the research activities of the universities;
- Initiatives taken to bring in administrative & academic activities of higher education institutions under automation or a computerized system, which will include administration, finance & accounts, planning & development, admission & publication of results of all exams, research, recruitment, training, purchase etc.
- Initiatives taken for establishing collaborative arrangements in the area of research of the universities at national and international levels.

8. Bureau of Non-Formal Education (BNFE)

- Initiatives taken for building up skilled manpower through the use of ICT in Non-Formal Education;
- Initiatives taken for initiating Early Childhood Development Programme (ECDP) with the help of multi-media materials prepared specially for the poor, slow, disadvantaged children and those living in the distant areas;
- Initiatives taken for creating access of common people to NFE through the use of ICT;
- Initiatives taken for organizing monitoring activities of the interactive Programmes at regular intervals;
- Initiatives taken for improvement of NFE with the use of ICT.

9. Directorate of Technical Education (DTE)

- Initiatives taken for providing assistance to the learners of technical & vocational education to become skilled in modern ICT education that is appropriate to the needs of times
- Initiatives taken for developing professional skills of teachers with the use of ICT;
- Initiatives taken for developing teaching-learning materials with the use of ICT;
- Initiatives taken for creating education-friendly environment with the infrastructural development of ICT;
- Initiatives taken for assessment of the demand of technical human resource for national and international industrial houses and creation of a MIS.

10. Campaign for Popular Education (CAMPE)

- Initiatives co-organized to facilitate prevention of drop out at primary level.
- Initiatives co-organized to make Bangladesh free of illiteracy by 2014.
- Initiatives co-organized to facilitate access of educational institutions nationwide to remove digital divide.
- Initiatives co-organized for creating access of common people to NFE through the use of ICT;
- Initiatives taken for organizing monitoring activities of the interactive Programmes at regular intervals;
- Initiatives co-organized for improvement of NFE with the use of ICT;
- Initiatives co-organized for ensuring people's participation in the implementation of NFE activity.

Annex 4: Focus Group Discussion Guidelines

The following list of questions and topics were addressed during conducted Focus Group Discussions (FGDs) with teachers and students:

1. Pre-primary and Primary Education

- ICT-based teaching-learning materials at primary education level;
- ICT-based professional skill development of the teachers,
- Use of ICT for making teaching-learning effective at primary education level;
- Available e-services at primary education level sector;
- ICT facilities established at primary educational institutions to remove digital divide;
- Activities for sharing ICT-based experiences and resource;
- Provision of ICT in education, appropriate to the needs of time, for the learners at primary level;
- Professional skills development of primary school teachers through ICT;
- Creating learner-friendly environment through infrastructural development of ICT;
- Ensuring safe and effective use of technology at primary education level.

2. Non-Formal Education

- Building skilled manpower through the use of ICT in Non-Formal Education;
- Creating access of common people to Non-Formal Education through the use of ICT;
- Improvement of Non-Formal Education with the use of ICT;
- Early Childhood Development Programme with the help of multi-media materials prepared specially for the poor, slow, disadvantaged children;
- Facilitate access to ICT materials for removing digital divide;
- Monitoring activities of interactive Programmes at regular intervals;
- Ensuring people's participation in the implementation of NFE activity.

3. General Education at Secondary Level

- Development of teaching-learning materials at secondary and higher education level;
- Development of professional skills of the teachers, making the teaching-learning Programmes more effective at secondary and higher education level;
- Available e-services at secondary and higher education sector;
- Facilities established at secondary and higher education institutions to remove digital divide;
- Providing education services at the doorsteps of the people;
- Use of the national educational portal for exchange of all materials and inclusion of all such teaching-learning materials into it;
- Safe and effective use of technology at secondary and higher education sector;
- Eradicating Digital Divide/ Discrimination at secondary and higher education sector.

4. Madrasah Education at Secondary Level

- Development of teaching- learning materials at Madrasah education level;
- Development of professional skills of the teachers, making the teaching-learning Programmes more effective at Madrasah education level;
- Ensuring e-services at Madrasah education sector;
- Facilities established at Madrasah educational institutions to remove digital divide.
- Activities undertaken for achieving different targets of the Master Plan for ICT in Education;
- Creating learner-friendly environment through infrastructural development of ICT;
-

5. Technical Education at Secondary Level

- Assistance to learners of technical & vocational education to become skilled in modern ICT education that is appropriate to the needs of times;
- Development of professional skills of teachers with the use of ICT;
- Development of teaching-learning materials with the use of ICT;
- Education-friendly environment with the infrastructural development of ICT;
- Assessment of the demand of technical human resource for national and international industrial houses;
- Creating learner-friendly environment through infrastructural development of ICT;
- Ensuring safe and effective use of technology at technical education level.

Annex 5: Resources used during Desk Review

The following resources were consulted and analyzed during the Desk Review:

- **Master Plan for Information and Communication Technology in Education (2012-2021)**, Government of the People's Republic of Bangladesh, 2012;
- **National Education Policy**, Government of the People's Republic of Bangladesh, 2010;
- **Information and Communication Technology Policy**, Government of the People's Republic of Bangladesh, 2015;
- **Seventh Five Year Plan FY2016-2021**, General Economics Division, Bangladesh Planning Commission, 2015;
- **Transforming our world: The 2030 Agenda for Sustainable Development**, United Nations, 2016;
- **Integration of Sustainable Development Goals into the 7th Five Year Plan**, General Economics Division, Bangladesh Planning Commission, 2016;
- **Annual Development Programme of the FY 2018-19**, Bangladesh Planning Commission, 2018;
- **Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4**, Korea, 2015;
- **Mapping of ministries by targets in the implementation of SDGs aligning with 7th Five Year Plan (2016-2020)**;
- **A baseline survey of Media Literacy among Secondary Students in Dhaka City**, SACMID, 2018
- **Annual Sector Performance Report**, DPE, 2016
- **National Student Assessment Report**, 2017
- **Secondary Education Development Programme Document**
- **Non Formal Education Development Programme Document**
- **Third Primary Education Development Programme Document**
- **ICT Competency Framework**, UNESCO, 2018 <http://unesdoc.unesco.org/images/0026/002657/265721e.pdf>
- **In-depth Monitoring of Access to Information**, Implementation Monitoring and Evaluation Division, Ministry of Planning, 2016
- **Situation Analysis of ICT and Mobile Based Literacy in Bangladesh**, UNESCO, 2016
- **In-depth Monitoring of Optical Fiber Cable Network Expansion in 339 Upazila**, Implementation Monitoring and Evaluation Division, Ministry of Planning, 2017



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