Government of the People's Republic of Bangladesh

Ministry of Education

Secondary and Higher Education Division

Study on "Diploma Graduates of Government Polytechnic Institute at Selected Areas of Bangladesh"

Bangladesh Bureau of Education Information and Statistics (BANBEIS)

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Abbreviation

ADP	Annual Development Program
BANBEIS	Bangladesh Bureau of Educational Information and Statistics
BBS	Bangladesh Bureau of Statistics
BISRT	Bangladesh Institute of Social Research Trust
BDT	Bangladeshi Taka
ECNEC	Executive Committee of the National Economic Council
EVI	Economic Vulnerability Index
FY	Fiscal Year
GDP	Gross Domestic Product
GNI	Gross National Income
GNP	Gross National Product
IMED	Implementation Monitoring and Evaluation Division
KII	Key Informant Interview
LDC	Least Developed Country
LIC	Low-Income Countries
LPL	Lower Poverty Line
MDGs	Millennium Development Goals
NGO	Nongovernmental Organization
OECD	Organization of Economic Co-operation and Development
PPP	Purchasing Power Parity
SDGs	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECOSOC	United Nations Economic and Social Council
US	United States
USD	United States Dollar

Executive Summary

Background of the Study

The International Monetary Fund claims that the economy of Bangladesh is now one of the fastest-growing major economies (6^{th}) in the world and the first in South Asia, securing an average 6.5% GDP growth rate from the beginning of the last decade. Though she started her journey as a war-ravaged nation after independence in 1971, Bangladesh has remarkably progressed in the socioeconomic status of the people of the country. Bangladesh has already capitalized the eligibility status for graduation from Least Developed Countries (LDCs) meeting the criteria of the indicators of National Income per capita, Human Assets Index, and Economic and Environmental Vulnerability Index. Bangladesh was treated as a lower-middle-income country in 2018 and got the final recommendations from the United Nations General Assembly (UNGA) committee in 2021 and to be rewardingly graduated from LGED to developing country by 2026.

But the skill development process in Bangladesh has not significantly progressed over the years. About 2% of the current 80 million employable youth labour force can be considered as skilled labour maintaining international standard while the rest can be said to be unskilled or with very low skills. About 500,000 migrant workers who fly overseas every year, among them 300,000 migrant workers are from low skilled category due to lack of attaining standard level of education and proper skilled training, although the Bangabandhu government emphasized on technical and vocational education after independence forming Qudrat-E-Khuda Education Commission on 26^{th} July 1972 having major changes in the primary, secondary, higher secondary and the stages of higher education (BMET, 2017). Technical education is playing a vital role in creating skilled manpower improving skills of the youth contributing to the socio-economic development of the country, but to ensure the quality of technical education is now the growing concerns in the Bangladesh.

Objectives of the Study

The overall objective of this study is to find out the present employment scenario of the graduates. From the government polytechnic institutes of Bangladesh. Besides this, the specific objectives are given below as:

i. To identify the employment status of the Diploma and Engineering graduates from government polytechnic institutes at selected areas;
ii. To identify the factors contributing towards employability of the graduates at home and abroad; and
iii. To identify the critical challenges to address the job demands (current and future) and way forward.

Methodology of the Study

Researchers have drawn on a variety of both qualitative and quantitative research methods including primary and secondary data collection, etc. Under the qualitative method, Key Informant Interviews (KIIs) has been conducted while under the quantitative method, a Semi-Structured Interview Schedule/questionnaire has been used to conduct the study. Reverent secondary data has been collected from published sources as per the objectives of the study. Diploma and Engineering graduates of the Government Polytechnic Institutes was the targeted respondents of the study who completed their graduation in 2015, 2016, 2017, 2018, and 2019. The study has covered following 9 Government Polytechnic Institutes including all the administrative divisions. These are Dhaka Polytechnic Institute, Chittagong Polytechnic Institute, Dhaka Mohila Polytechnic Institute, Rangpur Polytechnic Institute, Mymensingh Polytechnic Institute, Khulna Polytechnic Institute, Barisal Polytechnic Institute, Rajshahi Polytechnic Institute and Sylhet Polytechnic Institute. SPSS, Microsoft Excel, and KoboToolbox software have been used to analyze the data conducting the study.

Findings of the Study

Demographic Profile: The sample distribution according to gender shows that 72.75 percent of the diploma graduates were male and only 27.25 percent of them were female. The result indicates limited participation of women in the technical education in Bangladesh. The mean age of the graduates was 24 years while the majority of them (86 percent) belong to the age group of 22-26 years. In case of education, 37.94 percent of the respondents completed BSC after the diploma and others (74.4 percent) did not study further.

Name of Departments of the Selected Polytechnic Institutes of Bangladesh: The study team has collected 20.65% data from Civil department, 19.84% from Computer, 12.09% from Electrical, 10.46% from Mechanical, 9.38% from Electro-medical and Electronics respectively, 9.1% from Power (Automobile & RA), 5.03% from environment and 3.67% from Architecture to conduct the study.

The Purpose of Completing B.S.C: More than one-third of the respondents: More than one-thirds (38.8%) completed or completing their B.S.C for higher studies, 23.5% to get a better (well-paid) job, 16.5% to get a job, 9.5% for skill development, 7% to be a good engineer, and the other 4.7% completed or completing their B.S.C for social recognition.

The Purpose of Selecting the Trade*:* The highest (45%) respondents (diploma graduates) mentioned that the purpose of selecting the trade was for getting a job**,** 21% mentioned to be a good engineer, 14% mentioned skill development, 11% mentioned institutional requirement.

Passing Year of the Diploma Graduates: The highest 41% respondents who were interviewed over phone completed their graduation in 2018, 20% completed their graduation in 2017, 17.5% completed their graduation in 2016, 15.3% completed their graduation in 2019, and the others 5.1% completed their graduation in 2015.

Employment Status of the Diploma Graduates: More than half of the respondents (48.5 percent) were found employed during the study. Some 35.6 percent of the graduates were unemployed and 15.9 percent of them were students.

Nature of Employment: More than half of the respondents (62.2 percent) were engaged in full-time employment. While some of them were engaged in contractual (25.4 percent), self-employed (7.2 percent) part-time (2.7 percent), seasonal and freelancing (2 percent).

Types of Occupation: Nearly half of the diploma graduates (49 percent) were involved in technicians and associate professionals. Some 22.5 percent of them were corporate executive and 11.6 percent was doing different kind of business (self-employed).

Monthly Income of the Graduates: More than two-third of the diploma graduates (71 percent) monthly income was ranged between BDT 10001-20000. Another 17.7 percent of them reported that their income falls within BDT 20001-30000. A very few of them (1.1 percent) earned more than BDT 50000 monthly and the other 6.1 earn less than BDT 10000.

Effectiveness of the Trade for Job: More than two-third of the graduates (75.9 percent) mentioned that there are scope to implement the knowledge and skills they acquired at diploma level while some 13.5 mentioned that the scope is limited

Having Noticed Adequate Job Circulars Related to the Course: More than two-third of the diploma graduates (77.2%) have noticed adequate job circulars related to the course, 18.9% mentioned they have not noticed, and the other (3.7%) mentioned they have noticed not at all.

Satisfaction with the Course: More than half of the respondents **(**57%) respondents mentioned that they are satisfied with their courses and 13% are highly satisfied. The highest (61%) respondents mentioned that for Digital Skill Development, this course was effective, 9% mentioned this course was very effective. More than half of the respondents (58%) respondents mentioned that for getting a job, this course was effective, 7% mentioned this course was very effective.

Effectiveness of the Course Materials: (91%) mentioned that the existing method/curriculum was very effective. Likewise, 56.5% received the course materials. The highest (52.9%) mentioned that they Got Sufficient course materials. Likewise, the highest **(**67%) mentioned that the polytechnic institute had satisfactory institutional facilities for the course. The highest **(**98%) mentioned that they had a good number of experienced teachers/trainers to conduct the courses. Similarly, the highest (87.5%) mentioned that the course curriculum covered all the important topics of this trade.

Likewise, the highest (61.63%) respondents mentioned that the relationship between the teachers and students was very good.

Opinion of the Diploma Graduates on their Socio-Economic Status: The economic condition of 40 percent graduates' family has improved moderately after the graduation while for 20.5 percent it has improved a lot. Likewise, more than half of the respondents' (39.6 percent) housing condition has improved after the graduation. Around 47.7 percent of the graduates reported that they were able to save money at every month after the graduation. The participation in community has also increased for 62.2 percent of the graduates.

The Evaluation/assessment of the Overall Performance of the Practical Session of the Government Polytechnic Institute of Bangladesh: More than half of the respondent (57%) have expressed their opinions on the discussed topics are acceptable. Almost half of the respondents (49%) expressed their opinion on duration of the practical session as acceptable among the various topics discussed. More than half of the respondents (51%) (Diploma graduates) have expressed their opinion on the quality of the equipment for practical class is acceptable. About two-third of the respondents (66.2%) have expressed their opinion on classroom and other arrangements were acceptable.

Receiving Soft Skill Trainings: Only more than one-sixth (14.9%) mentioned they received Soft Skill Trainings, 65.5% mentioned that they did not receive, and the other 19.6% mentioned that they did not even have the knowledge about soft skills. Of those who have mentioned they received Soft Skill Trainings, among them 39.1% received programming/ machine programming, 17.1% received digital/computer literacy, 14.6% received machine language, and 11.2% received foreign language.

Achieving any Specific Skill from the Internship Opportunity: More than one-thirds of the diploma graduates (40%) received specific skill from the internship opportunity, and the other 60% have not received specific skill from the internship opportunity. Of those who have mentioned they received specific skill from the internship opportunity, among them 16% received programming/ machine programming, 22% received digital/computer literacy and machine language respectively, 18% received machine language, 15% received on professionalism and 17% received foreign language.

The Factors Contributing to the Employability of the Diploma Graduates at Home and Abroad: Less than one-thirds (29%) diploma graduates mentioned that technical skill is considered as a factor contributing to the employability of the diploma graduates at home and abroad, 23% mentioned job experience, 15% mentioned computer/digital literacy, 9% mentioned good GPA, 11% mentioned foreign language (speak and write in English), and 8% mentioned professional skill.

Chapter-I: Introduction

1.1 Background of the Study

The International Monetary Fund claims that the economy of Bangladesh is now one of the fastest-growing major economies (6^{th}) in the world and the first in South Asia, securing an average 6.5% GDP growth rate from the beginning of the last decade. Though she started her journey as a war-ravaged nation after independence in 1971, Bangladesh has remarkably progressed in the socioeconomic status of the people of the country. Bangladesh has already capitalized the eligibility status for graduation from Least Developed Countries (LDCs) meeting the criteria of the indicators of National Income per capita, Human Assets Index, and Economic and Environmental Vulnerability Index. Bangladesh was treated as a lower-middle-income country in 2018 and got the final recommendations from the United Nations General Assembly (UNGA) committee in 2021 and to be rewardingly graduated from LGED to developing country by 2026.

Bangladesh has now 49 government polytechnic institutes and 220 private polytechnic institutes with a view to increasing skills of the labor force, especially for the youth meeting the growing demands of industries and various service organizations. According to the Ministry of Education, Technical Education Board, and Department of Technical Education, among the total enrolled students in the country, only 14% are technical students. Still, as per the definition of the standard international technical education and the study of Bangladesh Bureau of Education Information and Statistics (BANBEIS), the technical students are only 8.44% of the total enrolled students. The government of Bangladesh has a plan to promote quality technical education. The government expects that the technical students will be 30% of the total students in the country by 2030, although the Bangabandhu government emphasized on technical and vocational education after independence forming Qudrat-E-Khuda Education Commission on 26^{th} July 1972 having major changes in the primary, secondary, higher secondary and the stages of higher education (Islam, 2021). The students will complete their technical and vocational education with vocational courses participating in one-year special training in class eleven on the particular subject related to their study courses in class nine and ten. The students who will appear at a public examination and will be entitled to getting a certificate completing the training in class eleven.

The students of technical and vocational institutions who will be willing to join in any industry to be skilled after completion of vocational course of class ten. They will be provided industrial internship program, who aspiring for higher education as per vocational knowledge. Students having completed the courses of class ten or class eleven

will be entitled to get admitted to specific and respective institutions. The Qudrat-E-Khuda Education Commission also emphasized on female education recommending subjects like nursing, health care, child-care, food and nutrition must be included for improving domestic life. It also recommended that girls could be channeled into "vocational education" which will be suitable especially for them, such as nursing, primary school teaching, and typing, etc.

But the skill development process in Bangladesh has not significantly progressed over the years. About 2% of the current 80 million employable youth labour force can be considered as skilled labour maintaining international standard while the rest can be said to be unskilled or with very low skills. About 500,000 migrant workers who fly overseas every year, among them 300,000 migrant workers are from low skilled category due to lack of attaining standard level of education and proper skilled training (BMET, 2017).

Bangladesh is one of the emerging economies in the world. During the 21st century, the growing demands of technological progress and modernization of every sector has been constantly increasing in most countries in the world. The education system is gradually being changed. Being a emerging economy, Bangladesh should invest much on educational sector, especially on technical and vocational education in order to increase the productivity of human resources and improve the human capital. There is a relation between human capital development and the promotion of quality education.

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), new skills are now required and educational institutions, especially polytechnic institutes are needed to meet up the growing demands of a developing country by providing not only the minimum schooling or vocational training but also training for scientists, innovators, and high-level specialists, etc.

The main purpose of polytechnic institutes of Bangladesh is to produce qualified and skilled young people to meet up the required technical persons in the work place. Economic development of a country is basically dependent on its capabilities using modern technologies and brings innovation of it. To do this rightfully skilled manpower at different levels needs to be produced to do all the required activities of the country. Technical Education in Bangladesh at present is prearranged in three tiers such as degree level education in engineering and technology, trade level training program and technician level education (diploma in engineering/technology).

Skilled manpower is indispensable to industrial development. Hence, technical and vocational education of Bangladesh is playing a vital role to increase the skills of the labor force creating skilled manpower but miles to go. Bangladesh government has already taken some strategic polices under the Ministry of Education (MoE), the Directorate of

Technical Education (DTE) which provides different types of formal Technical and Vocational Education and Training (TVET) through the polytechnic institutes throughout the country. The scope of vocational and technical education in polytechnic institutes in Bangladesh is still lag behind in contrast to the existing scope of universal education, and even to Madrasa education of the country. Technical education is playing a vital role in creating skilled manpower improving skills of the youth contributing to the socio-economic development of the country, but to ensure the quality of technical education is now the growing concerns in the Bangladesh.

1.2 Objectives of the Study

The overall objective of this study is to find out the present employment scenario of the graduates. From the government polytechnic institutes of Bangladesh. Besides this, the specific objectives are given below as:

iv. To identify the employment status of the Diploma and Engineering graduates from government polytechnic institutes at selected areas.

v. To identify the factors contributing towards employability of the graduates at home and abroad.

vi. To identify the critical challenges to address the job demands (current and future)and way forward.

1.3 Rationale of the Study

In Bangladesh, the technical education in the Government polytechnic institutes has been contributing to the development of human resources since 1960s. However, still this education sector has wide scope for contributing to the economic development significantly where only a small fraction of young workforce enters into the job market with vocational, technical, or skills development training; very few workers have adequate technical and vocational skills or qualifications. Besides this, Bangladesh supplies mainly non-skilled labours to the international job market. Those workers can easily contribute to the national development of Bangladesh at a large scale if they go for doing job in foreign countries with adequate specialized knowledge, skills and training. As the international labour market is very competitive like other businesses and trades, therefore, Bangladesh has no means rather than developing skilled manpower to compete in the international labour market as well as to get the highest benefit from this sector. The most important thing is that the influences of globalization in the present interdependent world is demanding new knowledge and skills of the workforces day by day in both local and international labour market where their traditional knowledge and skills are becoming ineffective to meet this demand. To face the challenges, vocational and technical

education in Bangladesh have to be incorporated such knowledge, skills and training for the graduates which meet up the present demands.

However, based on the recent trends of increased local and international needs of the skilled workforces, Bangladesh Government has put highest importance on "turn our students into competent manpower through vocational and technical education with emphasis on science, technology and especially on information technology" (National Education Policy, 2010, p. 24). In relation to this, the government has determined the aims and objectives of technical and vocational education including new dimensions of skill development of TVET students and teachers. For this, 25 strategies have been planned for framing and strengthening the ability of vocational and technical education to build up competent manpower in view of national and international demands. All of these efforts require rigorous changes in vocational and technical education on existing situation of the institutions, their curriculum, ongoing programs and trades, students' learning, teachers' ability and so on. In this context, mapping and need assessment of the current vocational and technical education system is needed for the government to implement it in accordance with the new policy and strategies. Especially mapping and need assessment study is essential for gathering further information about the scope of vocational education and training in Polytechnic institutes, and to identify and explore the priorities and needs for further training in keeping pace with the demand of current market.

Chapter-II: Literature Review

2.1 Literature of the Study

The emerging economy, Bangladesh is treated as one of the fastest growing major economies having many socio-economic success stories in the world. The country has been capitalized on an average 6.5% annual GDP growth rate from the last decade (Haider, 2019). The country has also made a significance progress in the socio-economic status against per capita national income, ensuring universal primary education, promoting gender equality and empowering women and female enrolment at the secondary level (% of total students), Human Assets Index (itself), and reducing Mortality Rate Index (under-five mortality rate) and child mortality, and life expectancy at birth in Bangladesh (year), etc.

There is a relationship between the improvement of technical and vocational education and the development an emerging economy like Bangladesh. There is a huge scope in Bangladesh to promote the quality technical and vocational education ensuring sustainable growth rate developing skills and the productivity of the labor force, especially for the youth. Bangladesh government has already taken many potential strategies to increase skills of the youth promoting of technical education and capitalize the maximum advantages of demographic dividend sustaining industrial outputs by increasing the productivity of the labor and capacity of the industries. Hence, the government polytechnic institutes of Bangladesh can play a important role to ensure quality of technical education (Ziderman, 1997).

The technical and vocational education system of Bangladesh as well as all over the world provides courses associated with various fields of science such as applied physics and applied chemistry, engineering, and other technical courses (i.e., Architecture, Civil, Computer, Chemical and Food, Environmental, Power (Automobile and RA), Electrical, Electronic and Mechanical, etc.) focusing on a specific specialized area. The government of Bangladesh has already emphasized on promoting of quality of technical and vocational education. Here, teaching and learning environment can be ensured maintain global standards so that the diploma graduates of Bangladesh can complete worldwide (Gelişli, 2007). However, the population of Bangladesh was over 161 million having 63.5 million labor forces, but only 5% of the total labor force received trainings, and just 1% of the total population has taken technical/vocational trainings (BBS, 2017).

Migration workers of Bangladesh have to face much discrimination such as paid less, doing lower level jobs, etc. for overseas employment due to lack of technical and soft skills and lack of bilateral or multilateral agreements with host countries in the world.

Though Bangladesh has been promoting the technical and vocational education from the 1960s, the quality of technical and vocational education is still in a lag behind (Tilak, 2002; Unterhalter, 2007).

Technical and Vocational Education and Training has been popular day by day in Bangladesh due to its suspected connection with the direct employability by gaining practical skills from the micro-level and helps to promote productivity and economic growth in the macro level in the country (Freiburg, 2010). By imparting practical knowledge and skills of the labor forces, especially for the youth, it would augment their productivity leads increase their incomes leads to increase savings, leads to increase investment of the country leads thereby to contribute to overall economic growth of the country (Becker, 1962).

2.2 Technical and Vocational Education in Bangladesh

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), TVET comprises formal and informal learning at work place all over the world. The UNEVOC's (International Centre for Technical Vocational Education and Training) definition of TVET has added to the UNESCO definition by referring to an assortment of learning experiences that could take place in a multiplicity of learning contexts, including workplaces, and educational institutions, etc. The UNEVOC-UNESCO has jointly defined that: "the acquisition of knowledge and skills for the world of work to increase opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development for both women and men, in both urban and rural communities." TVET programs are usually intended to get ready the learners for direct entry into a particular occupation or trade, and usually leading to a labor market occupational qualification that is recognized by relevant stakeholders.

Skilled work force is an important element of socio-economic development of a developing country like Bangladesh. Methods and strategies of development of a country are always changing due to new inventions and innovations. There is a realization of the challenges to make Vocational Education (VE) system to be more dynamic, need-based and effective, and 9 receptive to the changes to take places in the industrial sectors of Bangladesh. Vocational Education system must be responded to the swiftly changing the technological demands of the world of work by endlessly evaluating and modifying the existing curricula in course of time, introducing new courses as per demands, vocational teacher education, modernizing labs, laboratories and workshops through establishing close partnership between vocational educational institution and the world of work (Elbushari and Aktaruzzaman, 2012). For an emerging economy like Bangladesh, opportunities of socio-economic development can be created with uneven antagonism and the value of physical labor can be augmented.

The Bangladesh Government is expected to achieve the graduation from Least Developed Countries (LDCs) to developing country by 2026 and she is now considering the potential contribution of Technical Vocational Education and Training (TVET) for the growth of the economy by creating skilled manpower and creating self-employments and jobs (Shibli, 2021). TVET can also contribute to decrease poverty rate by providing employability skills, particularly to the youth who has already dropped out from the school early and to the large number of unemployed and underemployed adults. About 24 ministries and 20 agencies are involved in skills development and non-formal education delivery and TVET are also playing a significant role for skill development of the youth following government's vision and commitment. Besides, there are many types of public and private training institutes and NGOs which are directly or indirectly involved in the TVET sector in Bangladesh.

Education is the main key of sustainable development as well as vocational education (VE) is the main tool of skill development (Cornford, 2005 and Rahman et al. 2010). VE is the work-based and training oriented education. It has a genuine impact on socio-economic development of the developing countries like Bangladesh (Elbushari and Aktaruzzaman, 2012).

Combined and highly qualified vocational framework is compulsory meeting up the growing demands of the job market for skill labor force for an emerging economy like Bangladesh creating a skilled and knowledge-based economy, and struggling against social inequality, etc. Having all those things same in Bangladesh, the country has been suffering from lack of skilled manpower due to the poor formulation and implementation of strategies. If Bangladesh wants to achieve competitive advantage through its large workforce then there is no substitute to make manpower turn into human resource by the appropriate implementation of TVET in a developing country (Newaz et al., 2013).

Out of the labor force aged 15 years and above, about 40% of the labor force has no formal education or training in Bangladesh. Skill development of a large number of labor force, especially for the youth is now the growing concern for Bangladesh to capitalize the advantage of demographic dividend of the country. Besides this concern, almost half of the work force is still having without education and only one-third with education at primary level (SFYP, 2011). As a result, it has become a common myth that the biggest limitation of the development of Bangladesh is its huge unskilled population but there is a huge possibility for skill development through providing quality trainings and upgrading the training curriculum as per demands and adaptation of workers to changing skill demands. We are living in ultramodern era of the human history, technology changes over night, competition has no longer between countries but all over the world. The growing rate of change driven by new technology, new forms of work places, new demand for

quality products, etc. Advancement and promotion of technical and vocational education can be one of the ultimate solutions meeting up the skill gaps of the labor force and making the youth be competent for completive markets globally (Attwell, 1999).

Majority of the labor force are engaged in the informal sector. Agriculture is the major sector of employment of the majority (37.8%). About 78% of total employment created in informal sector. Thinking its importance, agriculture subject was first introduced as an indispensable course at the secondary level as a basic subject of general education from January 1994. The prime purpose of this subject is to make orientation to agriculture, horticulture, fishery and livestock to the students. In order to promote the skill of the youth, Bangladesh government has emphasized on technical and vocational education. About 0.7 million boys and girls are admitted in technical and vocational educational institutes every year (Rafique, 1994).

TVET education emphasizes on the attainment of appropriate skills and knowledge as educational tools to acclimatize to the practical work station for the respective students promoting skills contributing to the socio-economic development of the country. TVET education is required to evaluate the ability of the students promoting their skills providing interest based courses, program content, teaching materials and teacher training, etc. It also promotes the employment conditions to determine the relationship between industry and education (Olkun, 1999).

The main purpose of technical and vocational education is to educate and train students to become qualified human resources promoting their skills to get employment in industry, trade and service sectors. It also provides basic necessary education to the students of the respective courses as per demands of the market and helps for transition to higher education institutions promoting their professional skills. The main purpose of TVET education is to prepare students to work as technologists providing technical trainings to the individual to enter a job in the business and to gain basic behaviors in order to promote skills based on their courses and as per demands of the market (Sezgin, 2000 and Esme, 2007).

2.3 Research Gap

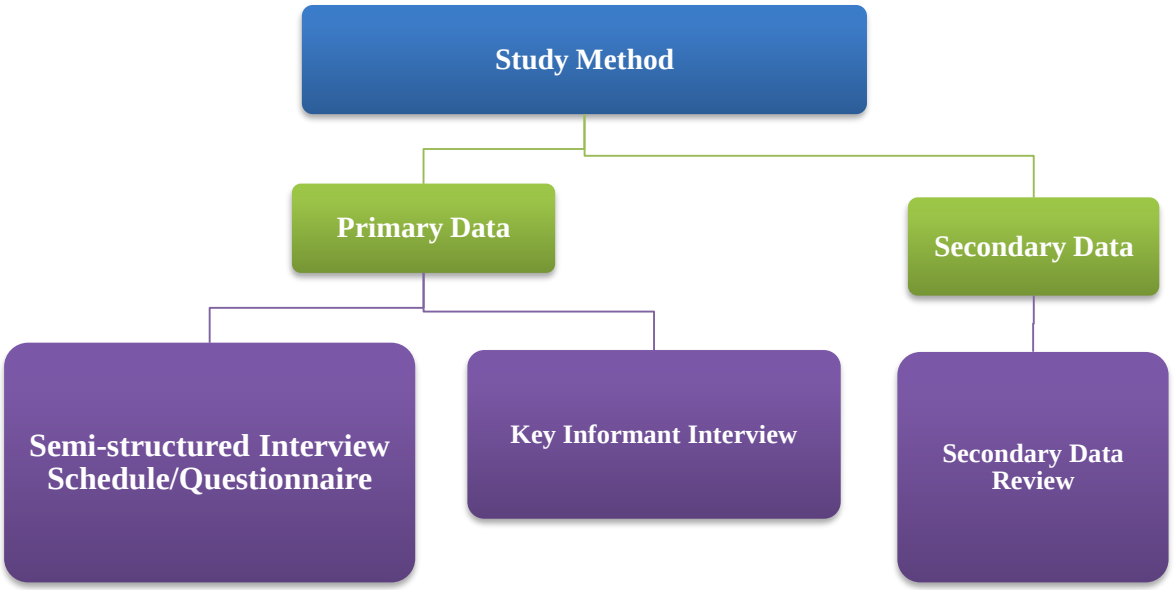
A few numbers of books and articles with good quality were written on technical and vocational education, especially diploma education of Bangladesh. The researchers have tried to find out the present employment scenario/status of the diploma graduates in Bangladesh.

Chapter-III: Methodology of the Study

3.1 Methods of the Study

Researchers have drawn on a variety of both qualitative and quantitative research methods including primary and secondary data collection, etc. Under the qualitative method, Key Informant Interviews (KIIs) has been conducted while under the quantitative method, a Semi-Structured Interview Schedule/questionnaire has been used to conduct the study. Reverent secondary data has been collected from published sources as per the objectives of the study. Diploma and Engineering graduates of the Government Polytechnic Institutes was the targeted respondents of the study who completed their graduation in 2015, 2016, 2017, 2018, and 2019. The study has covered following 9 Government Polytechnic Institutes including all the administrative divisions. These are Dhaka Polytechnic Institute, Chittagong Polytechnic Institute, Dhaka Mohila Polytechnic Institute, Rangpur Polytechnic Institute, Mymensingh Polytechnic Institute, Khulna Polytechnic Institute, Barisal Polytechnic Institute, Rajshahi Polytechnic Institute and Sylhet Polytechnic Institute. SPSS, Microsoft Excel, and KoboToolbox software have been used to analyze the data conducting the study.

Figure-1: Methodology of the Study



Primary Data Collection

The study has covered 9 Government Polytechnic Institutes including all the administrative divisions. The selected institute's are as follows:

- × Dhaka Polytechnic Institute
- × Chittagong Polytechnic Institute

- Mymensingh Polytechnic Institute
- Rangpur Polytechnic Institute
- Dhaka Mohila Polytechnic Institute
- Khulna Polytechnic Institute
- Barisal Polytechnic Institute
- Rajshahi Polytechnic Institute
- Sylhet Polytechnic Institute

Secondary Data Collection

Secondary analysis can involve the use of single or multiple qualitative data sets, as well as mixed qualitative and quantitative data sets. The study team has consulted national and international research reports that are available. The study has been carried out by reviewing existing literature and secondary information to provide comprehensive overview of the sector in terms of its dynamics in growth and employment. After completion of the secondary research, required primary data has been collected using appropriate research technique.

3.2 Tools for Data Collection

- *Semi-Structured Questionnaire:* In order to assess the effectiveness of the study, a questionnaire survey has been used to interview the graduates of the 9 Government Polytechnic Institutes. A semi-structured questionnaire has been used for conducting one-to-one interview with the participants. Some of the graduates who are currently residing and employed overseas will be interviewed over the phone.

- *Key Informant Interviews*: The purpose of key informant interviews is to collect information from a wide range of people who have first-hand knowledge about the study. They can provide insight on the nature of problems and give recommendations for solutions. For the present study, 50 KIIs have been conducted with different stakeholders as per TOR, such as head of the 9 institutions, teachers, employers (government, corporate, self-employed, formal, industry and service), TVET experts. A standard checklist (well pre-tested) will be used for conducting the KIIs.

3.3 Sample Selection

From general theory the minimum required sample size is determined by the usual sample size determination formula for estimating proportion, which is used by (BBS, 2011):

With, $n_0 = \frac{p\,(1-p)\,z^2_{\alpha/2}}{d^2}$

Where, n=sample population, N=Total population, deff=degree of freedom

Where, p is a proportion of the required characteristics in the population, $z^2_{\alpha/2}$, the value of the standard normal variate allowing (1-α) % confidence interval, d is the allowing margin of error, N is the population size, and deff is the design effect used for complex surveying using multistage cluster sampling.

The conventional value α= 0.05 has been considered which has given $Z_{\alpha/2}$= 1.96 and deff can be taken as 1.5 - 2.0 for most socio-economic surveys in Bangladesh. Theoretically, when p is unknown, p=0.5 gives the safest sample size since p (1-p) takes the highest value for p=0.5. The allowable margin of error is d =0.05 will be used. For a safer sample size design effect has been chosen as deff = 2.

So, $n_0 = \frac{(0.5)\,(0.5)\,(1.96)^2}{(0.05)^2} = 384$

Then, $n = \frac{384}{1 + \frac{384}{20900}} \times 2 = 753$ samples

A total of 760 samples have been finalized in consultation with BANBEIS.

As per statistical requirement the study needs to cover minimum 760 samples that have been distributed proportionately (using PPS method) based on the collected list of graduates from the following 9 government polytechnic institutes in Bangladesh.

SL No.	**List of Institutes**	**Samples**
1	Dhaka Polytechnic Institute	112
2	Chittagong Polytechnic Institute	114
3	Mymensingh Polytechnic Institute	103
4	Rangpur Polytechnic Institute	111
5	Dhaka Mohila Polytechnic Institute	91
6	Khulna Polytechnic Institute	35
7	Barisal Polytechnic Institute	82
8	Rajshahi Polytechnic Institute	65
9	Sylhet Polytechnic Institute	47
	Total Sample	**760**

Among them, some of the graduates who are currently residing and employed overseas have been interviewed over the phone. The distribution of Key informant interviews is given below:

SL No.	Key Informants	Number of KIIs
1	Head of the Polytechnic Institutes	9
2	Teachers	27
3	Employers	11
4	TVET expert	3
	Total	**50**

3.4 Objective-wise Methodology

To make the assessment more analytical, the objective-wise methodology has been followed during the study.

Objectives of the Study	Methods to be Followed
To identify the employment status of the Diploma and Engineering graduates from government polytechnic institutes in the selected areas.	× Literature review × Key Informant Interviews × Questionnaire Survey
To identify the factors contributing towards employability of the graduates at home and abroad.	× Literature Review × Questionnaire Survey (Over phone interview)
To identify the critical challenges to address the job demands (current and future) and the way forward	× Key Informant Interviews × Literature review

3.5 Implementation Strategy

Recruitment and Training of Field Investigators

The consultant recruited a required number of field staffs for conducting the survey smoothly and to complete all the tasks within the defined timeframe. A 2-day tailored and in-depth training program was arranged for the field staffs that included orientation and repeated practice sessions. Finally, required number of Field Investigators (FI) was selected through oral and written test.

Monitoring and Supervision

The investigation teams were guided by one Study Coordinator (SC). Supervisors were recruited to maintain contacts with the SC day to day basis on the progress of data collection. The Supervisors were responsible for ensuring supervision and management of team at the field level by assigning and taking stock of team's day's work by survey, arrange and accommodation, coordinate with local institutions. They were re-interviewed a significant portion of data for the validation purpose.

Quality Control

Following the standard quality control method, a sample size of 5% was selected randomly for quality rechecking. Quality Control interview findings were compared with the original interviews and any inconsistency was resolved accordingly. The Quality Control interviews were conducted by the Quality Control Officers.

Registration of Documents

There was one registration section in the office and the main responsibility of this section was to keep track of the filled-in interviewing documents, information schedules, performance reports and other necessary papers.

Data Editing

The information collected during fieldwork was scrutinized 100% of each interviewer's interview schedule to check the quality of the raw data. It was basically a process of examination to detect errors, omissions of any and to correct these wherever possible and the respondents may be re-interviewed at the field level, if needed.

Coding

Coding system was developed and all data were coded. Individual coding manual was developed for individual questionnaire by the experts.

Data Entry and Cleaning

Data entry was conducted by data entry operator under the supervision of data analyst. Before data entry a data entry program was developed in SPSS. Data cleaning is an important procedure during which the data is inspected, and erroneous data is corrected. Data cleaning was done during the stage of data entry.

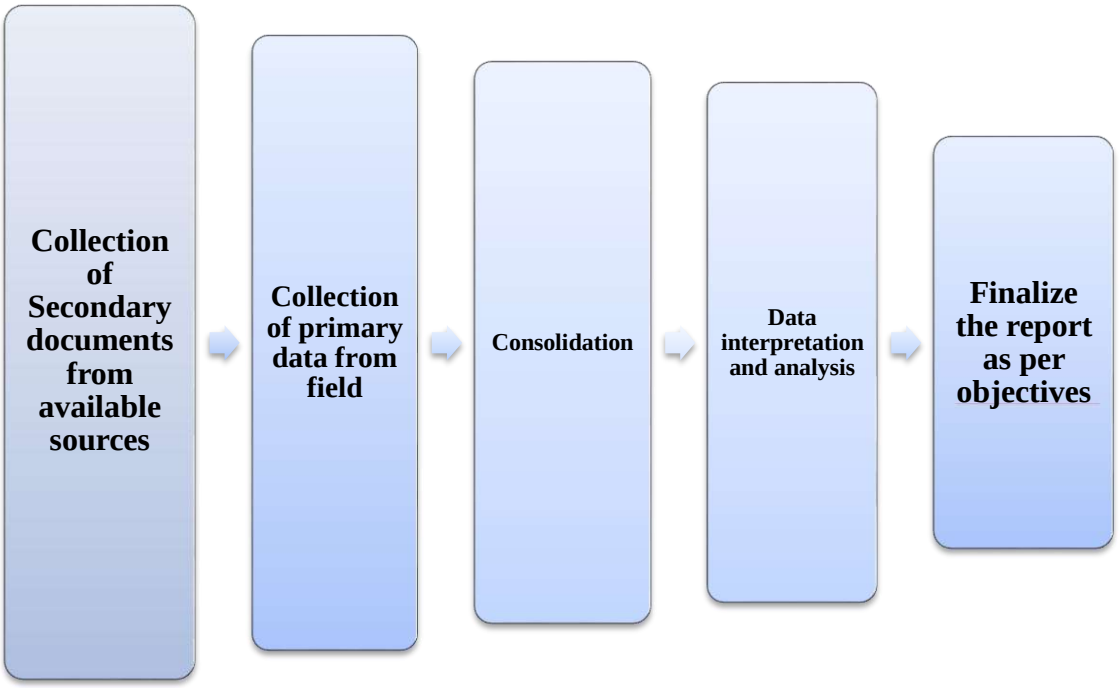
In case of qualitative data which consists of words and observations, not numbers, was checked and cleaned carefully in light of the study objectives.

Data Analysis

For the present study, quantitative data was analyzed by using SPSS in light of the study objectives. Qualitative data was analyzed in light of the study objectives by following relevant interpretation techniques. After data analysis, a report was prepared presenting the results.

3.6 Report Writing

After completing the field data collection and data analysis, the consultant wrote report in light of study objectives. The results were presented as texts, tables, graphs, and pictures. The following procedure was followed to achieve the study objectives (in consultation with BANBEIS):



Chapter-IV: Findings of the Study

4.1 Basic Household Information (socio-demographic characteristics of the respondents)

Demographic Profile: The sample distribution according to gender shows that 72.75 percent of the diploma graduates were male and only 27.25 percent of them were female. The result indicates limited participation of women in the technical education in Bangladesh. The mean age of the graduates was 24 years while the majority of them (86 percent) belong to the age group of 22-26 years. In case of education, 37.94 percent of the respondents completed BSC after the diploma and others (74.4 percent) did not study further.

Table-1: Demographic Profile of the Respondents

Responses	Percentage (%)
Gender of the respondent	
Female	27.25
Male	72.75
Total	100
Level of education	
Diploma	62.06
Graduate (BSC)	37.94
Post-graduate	--
Total	**100**

Name of Departments of the Selected Polytechnic Institutes of Bangladesh

Data presented in table-2 shows that the study team collects 20.65% of total data from Civil department, 19.84% from Computer, 12.09% from Electrical, 10.46% from Mechanical, 9.38% from Electro-medical and Electronics respectively, 9.1% from Power (Automobile & RA), 5.03% from environment and 3.67% from Architecture to conduct the study.

Table-2: Percentage of Respondents from the Departments of Selected Polytechnic Institutes of Bangladesh

Name of the Department	Percentage (%)
Civil	20.65
Computer	19.84
Electrical	12.09
Mechanical	10.46
Electro-medical	9.38
Electronics	9.38
Power (Automobile & RA)	9.1
Environmental	5.03
Architecture	3.67
Total	**100**

The Purpose of Completing B.S.C

Data table-3 shows that the highest (38.8%) completed or completing their B.S.C for higher studies, 23.5% to get a better (well-paid) job, 16.5% to get a job, 9.5% for skill development, 7% to be a good engineer, and the other 4.7% completed or completing their B.S.C for social recognition.

Table-3: The Purpose of Completing B.S.C

Responses	Percentage (%)
For higher studies	38.8
To get a better (well-paid) job	23.5
To get a job	16.5
Skill development	9.5
To be a good engineer	7
Social Recognition	4.7
Total	**100**

The Purpose of Selecting the Trade

Data presented in table-4 shows the highest (45%) respondents (diploma graduates) mentioned that the purpose of selecting the trade was for getting a job**,** 21% mentioned to be a good engineer, 14% mentioned skill development**,** 11% mentioned institutional requirement.

Table-4: The Purpose of Selecting the Trade

Responses	Percentage (%)
Skill development	14
To be a good engineer	21
Achieving certificate	5
Institutional requirement	11
For getting a job	45
Others	4
Total	**100**

Passing Year of the Diploma Graduates in the Selected Government Polytechnic in Bangladesh

Data presented in table-5 shows that the highest 41% respondents who were interviewed over phone completed their graduation in 2018, 20% completed their graduation in 2017, 17.5% completed their graduation in 2016, 15.3% completed their graduation in 2019, and the others 5.1% completed their graduation in 2015.

Table-5: Passing Year of the Diploma Graduates

Passing Year of the Diploma Graduates	Percentage (%)
2019	15.3%
2018	41%
2017	20%
2016	17.5%
2015	5.1%
Total	**100**

4.2 Employment Status of the Diploma Graduates

Data presented in table-6 shows that almost half of the diploma graduates (48.5 percent) were found employed during the study. Some 35.6 percent of the graduates were unemployed and 15.9 percent of them were students. Polytechnic wise and department wise responses on employment status of the diploma graduates in the selected polytechnic institutes of Bangladesh reflected in table-6 (i).

Table-6: Employment Status of the Diploma Graduates

Responses	Percentage (%)
Employed	48.6
Student	15.8
Unemployed	35.6
Total	**100**

Table-6(i): Polytechnic Wise and Department Wise Responses on Employment Status of the Diploma Graduates in the Selected Government Polytechnic in Bangladesh

Name of the Government Polytechnic Institutes	Name of the Departments in the Respective Polytechnic Institutes	Employment Status of the Diploma Graduates	
		Responses	**Percentage (%)**
Dhaka Polytechnic Institute	Architecture	Employed	66.7
		Student only	26.7
		Unemployed	6.7
		Total	**100**
	Civil	Employed	80.0
		Student only	13.3
		Unemployed	6.7
		Total	**100**
	Computer	Employed	58.3
		Student only	29.2
		Unemployed	12.5
		Total	**100**
	Electrical	Employed	28.1
		Student only	31.8
		Unemployed	40.1
		Total	**100**
	Electronics	Employed	50.1
		Student only	15.2
		Unemployed	34.7
		Total	**100**
	Environmental	Employed	28.6
		Student only	42.9
		Unemployed	28.6
		Total	**100**

	Mechanical	Employed	81.1
		Student only	11.4
		Unemployed	7.5
		Total	**100**
	Power (Automobile & RA)	Employed	75.1
		Student only	11.5
		Unemployed	13.4
		Total	**100**
Dhaka Mohila Polytechnic Institute	Architecture	Employed	41.7
		Student only	41.7
		Unemployed	16.7
		Total	**100**
	Electro-Medical	Employed	45.5
		Student	13.1
		Unemployed	41.4
		Total	**100**
	Computer	Employed	58.3
		Student only	11.1
		Unemployed	30.6
		Total	**100**
	Electronics	Employed	31.3
		Student only	19.2
		Unemployed	49.5
		Total	**100**
Chittagong Polytechnic Institute	Civil	Employed	60.0
		Student only	13.3
		Unemployed	26.7
		Total	**100**
	Computer	Employed	51.3
		Student only	22.1
		Unemployed	26.6
		Total	**100**
	Electrical	Employed	61.5
		Student only	15.4
		Unemployed	23.1
		Total	**100**
	Electronics	Employed	56.3
		Student only	18.8
		Unemployed	25.0
		Total	**100**

	Environmental	Employed	77.8
		Student only	5.6
		Unemployed	16.7
		Total	**100**
	Mechanical	Employed	80.0
		Student only	6.7
		Unemployed	13.3
		Total	**100**
	Power (Automobile & RA)	Employed	76.5
		Student only	12.7
		Unemployed	10.9
		Total	**100**
Barisal Polytechnic Institute	Civil	Employed	25.1
		Student only	16.7
		Unemployed	58.2
		Total	**100**
	Electrical	Employed	41.7
		Student only	8.2
		Unemployed	50.1
		Total	**100**
	Mechanical	Employed	50.0
		Student only	16.7
		Unemployed	33.3
		Total	**100**
	Power (Automobile & RA)	Employed	50.0
		Student only	8.3
		Unemployed	41.7
		Total	**100**
	Electronics	Employed	44.7
		Student only	16.8
		Unemployed	38.5
		Total	**100**
	Computer	Employed	16.7
		Student only	58.3
		Unemployed	25.0
		Total	**100**
	Electro-Medical	Employed	55.3
		Student only	23.2
		Unemployed	21.5
		Total	**100**

Mymensingh Polytechnic Institute	Civil	Employed	46.4
		Student only	14.3
		Unemployed	39.3
		Total	**100**
	Mechanical	Employed	70
		Student only	10
		Unemployed	20
		Total	**100**
	Electrical	Employed	66.7
		Student only	9.5
		Unemployed	23.8
		Total	**100**
	Electronics	Employed	60.1
		Student only	13.2
		Unemployed	26.7
		Total	**100**
	Power (Automobile & RA)	Employed	77.3
		Student only	9.1
		Unemployed	13.6
		Total	**100**
	Electro-Medical	Employed	19.7
		Student only	13.6
		Unemployed	66.7
		Total	**100**
	Computer	Employed	67.7
		Student only	19.1
		Unemployed	13.2
		Total	**100**
Rangpur Polytechnic Institute	Civil	Employed	41.2
		Student only	23.5
		Unemployed	35.3
		Total	**100**
	Electrical	Employed	25.1
		Student only	18.8
		Unemployed	56.1
		Total	**100**
	Mechanical	Employed	31.2
		Student only	18.7
		Unemployed	50.1
		Total	**100**

	Power (Automobile & RA)	Employed	22.7
		Student only	18.2
		Unemployed	59.1
		Total	**100**
	Electronics	Employed	31.1
		Student only	25.1
		Unemployed	43.8
		Total	**100**
	Computer	Employed	35.7
		Student only	28.6
		Unemployed	35.7
		Total	**100**
	Electro-Medical	Employed	21.2
		Student only	15.2
		Unemployed	63.6
		Total	**10**
Rajshahi Polytechnic Institute	Civil	Employed	45.5
		Student only	18.2
		Unemployed	36.4
		Total	**100**
	Computer	Employed	52.9
		Student only	35.3
		Unemployed	11.8
		Total	**100**
	Electrical	Employed	66.7
		Student only	11.1
		Unemployed	22.2
		Total	**100**
Khulna Polytechnic Institute	Civil	Employed	27.3
		Student only	21.5
		Unemployed	51.2
		Total	**100**
	Electrical	Employed	27.3
		Student only	18.2
		Unemployed	54.5
		Total	**100**
	Environmental	Employed	45.5
		Student only	18.2
		Unemployed	36.4
		Total	**100**

	Mechanical	Employed	38.5
		Student only	15.4
		Unemployed	46.2
		Total	**100**
Sylhet Polytechnic Institute	Computer	Employed	7.7
		Student only	46.2
		Unemployed	46.2
		Total	**100**
	Civil	Employed	60
		Student only	22
		Unemployed	18
		Total	**100**
	Electrical	Employed	18.7
		Student only	66.7
		Unemployed	14.7
		Total	**100**
	Mechanical	Employed	50.0
		Student only	27.0
		Unemployed	23.0
		Total	**100**
	Electro-Medical	Employed	18.2
		Student only	27.3
		Unemployed	54.5
		Total	**100**
	Electronics	Employed	33.3
		Student only	50.0
		Unemployed	16.7
		Total	**100**
	Power (Automobile & RA)	Employed	25.0
		Student only	50.0
		Unemployed	25.0
		Total	**100**

Nature of Employment

Those who were found employed were further asked about their nature of employment. The result shown in Table-7 indicates that majority of the respondents (62.2 percent) were engaged in full-time employment. While some of them were engaged in contractual (25.4 percent), self-employed (7.2 percent) part-time (2.7 percent), seasonal and freelancing (2 percent).

Table-7: Nature of Employment

Responses	Percentage (%)
Full-time job	62.6
Contractual	25.4
Self-employed	7.2
Independent/freelancers	2.0
Part-Time	2.7
Total	**100.0**

Types of Occupation

Data presented in table-8 shows that nearly half of the diploma graduates (49 percent) were involved in technicians and associate professionals. Some 22.5 percent of them were corporate executive and 11.6 percent was doing different kind of business (self-employed). The types of occupation were different for others.

Table-8: Types of Occupation

Responses	Percentage (%)
Technicians and associate professionals	49
Corporate executives	22.5
Any kind of business (self-employed)	11
Government jobs	2.4
Service workers (health workers, bankers, etc.)	6.1
Others	9
Total	**100.0**

4.3 Monthly Income of the Graduates

More than two-third of the diploma graduates (71 percent) monthly income was ranged between BDT 10001-20000. Another 17.7 percent of them reported that their income falls within BDT 20001-30000. A very few of them (1.1 percent) earned more than BDT 50000 monthly and the other 6.1 earn less than BDT 10000 reflected in the table-9.

Table-9: Monthly Income of the Graduates

Responses	Percentage (%)
BDT. 10001-20000	71
BDT. 20001-30000	17.7
BDT. 30001-40000	2.3
BDT. 40001-50000	1.8
Less than BDT. 10000	6.1
More than BDT. 50000	1.1
Total	**100.0**

4.4 Effectiveness of the Trade for Job

The employed diploma graduates were also asked some more questions related to the effectiveness of the trade for job. It has found that 73.5 percent of the graduates got their expected job after completed diploma from this trade. For majority of the respondents (44 percent), it took less than 6 months to get the job after graduation while for 33 percent it took less than 1 year.

Around 72 percent of the respondents stated that their academic knowledge and skills was appropriate for the current job and some 19.7 mentioned that it was somewhat appropriate. Similarly, more than two-third of the graduates (75.9 percent) mentioned that there are scope to implement the knowledge and skills they acquired at diploma level while some 13.5 mentioned that the scope is limited reflected in Table-10.

Table-10: Effectiveness of the Trade for Job

Responses	Percentage (%)
Got Expected job	
Yes	73.5
No	26.5
Total	100
How long It took to get the Job after Diploma Graduation?	
Less than 6 months	43.5
Less than 1 year	32.7
More than 1 year	17.0
More than 2 years	6.8
Total	100
Academic knowledge and skills appropriate for the current job	
Yes	75.9
Somewhat	10.6
No	13.5
Total	100
Scope to implement the knowledge and skills at workplace	
Yes	69.4
Somewhat	21.8
No	8.8
Total	100

Job Preparation Time of Unemployed Graduates

Moreover, to know the waiting time after graduation, the unemployed diploma graduates were also questioned about their job preparation. The findings demonstrated in Table-11 indicates that approximately one-third of the graduates (31.6 percent) taking job preparation for less than 1 year. Some 24 percent of the respondents preparing themselves for less than 6 months while others were taking preparation for more than this.

While talking about the number of jobs they have applied in the last 12 months, 89.5 percent of the respondents applied in less than 30jobs in the last 12 months. Also, majority of them (71.1 percent) participated in less than 10 job exams in the last 12 months. The respondents were also asked if they got any opportunity other than their expected job but denied it. Around 71 percent of the graduates responded negatively while 29 percent of them got job opportunity other than their expectation. Hence, lack of expected job was one of the major barriers of unemployment.

Table-11: Job Preparation Time of Unemployed Graduates

Responses	Percentage (%)
How long are you preparing yourself for a job?	
Less than 6 months	23.7
Less than 1 year	31.6
More than 1 year	28.9
More than 2 years	15.8
Total	100
Jobs applied for in the last 12 months	
Less than 30	89.5
Less than 60	5.3
Less than 90	5.3
Total	100
Job exam participated in 12 months	
Less than 10	71.1
Less than 20	15.8
Less than 30	7.9
Less than 40	5.3
Total	100
Got any opportunity other than expected job but denied it	
Yes	71.1
No	28.9
Total	100

Both the employed and unemployed graduates were asked about the challenges faced by diploma graduates in Bangladesh. Data presented in Table 3.8 shows that low job opportunity was considered as challenge by 71.1 percent of the diploma graduates. Besides, 68 percent of the respondents thought that it is lack of expected job opportunity. Some 53.8 percent of the respondents claimed that lack of skills required for a job was the main challenge. Also, unfair recruitment policies (49.7 percent), lack of awareness about the job requirements (46.7 percent), lack of information on vacancies (37.1 percent), and gender inequality (12.7) were identifies as the major challenges faced by the diploma graduates reflected in table-9.

Having Noticed Adequate Job Circulars Related to the Course

Data presented in table-12 shows that the highest (77.2%) respondents have noticed adequate job circulars related to the course, 18.9% mentioned they have not noticed, and the other (3.7%) mentioned they have noticed not at all. Polytechnic wise and department wise responses on noticed adequate job circulars related to the course by the diploma graduates in the selected polytechnic institutes of Bangladesh reflected in the following table-12 (i).

Table-12: Having Noticed Adequate Job Circulars Related to the Course

Responses	Percentage (%)
Yes	77.2
No	18.9
Not at all	3.9
Total	**100**

Table-12 (i): Polytechnic Wise and Department Wise Responses on Having Noticed Adequate Job Circulars Related to the Course

Name of the Government Polytechnic Institutes	Name of the Departments in the Respective Polytechnic Institutes	Having Noticed Adequate Job Circulars Related to the Course	
		Responses	**Percentage (%)**
Dhaka Polytechnic Institute	Architecture	Yes	73.3
		No	26.7
		Not at all	0
		Total	**100**
	Civil	Yes	86.7
		No	6.7
		Not at all	6.7
		Total	**100**
	Computer	Yes	66.7
		No	33.3
		Not at all	0
		Total	**100**
	Electrical	Yes	88
		No	12
		Not at all	0
		Total	**100**
	Electronics	Yes	85
		No	15
		Not at all	0
		Total	**100**
	Environmental	Yes	78.6
		No	21.4
		Not at all	0
		Total	**100**
	Mechanical	Yes	81
		No	19
		Not at all	0
		Total	**100**
	Power (Automobile & RA)	Yes	50.0
		No	43.8
		Not at all	6.2
		Total	**100**
Dhaka Mohila	Architecture	Yes	25

Polytechnic Institute		No	50
		Not at all	25
		Total	**100**
	Electro-Medical	Yes	34.8
		No	56.5
		Not at all	8.7
		Total	**100**
	Computer	Yes	97.2
		No	2.8
		Don’t know	0
		Total	**100**
	Electronics	Yes	97
		No	3
		Not at all	0
		Total	**100**
Chittagong Polytechnic Institute	Civil	Yes	80
		No	20
		Not at all	0
		Total	**100**
	Computer	Yes	97
		No	3
		Not at all	0
		Total	**100**
	Electrical	Yes	75
		No	25
		Don’t know	0
		Total	**100**
	Electronics	Yes	80
		No	20
		Not at all	0
		Total	**100**
	Environmental	Yes	63.6
		No	36.4
		Not at all	0
		Total	**100**
	Mechanical	Yes	60
		No	40
		Not at all	0
		Total	**100**
	Power (Automobile & RA)	Yes	80
		No	20
		Not at all	0

		Total	**100**
Barisal Polytechnic Institute	Civil	Yes	66.7
		No	33.3
		Not at all	0
		Total	**100**
	Electrical	Yes	41.7
		No	25
		Not at all	33.3
		Total	**100**
	Mechanical	Yes	66.7
		No	25
		Not at all	8.3
		Total	**100**
	Power (Automobile & RA)	Yes	58.3
		No	33.3
		Not at all	8.4
		Total	**100**
	Electronics	Yes	56.3
		No	35.3
		Not at all	8.4
		Total	**100**
	Computer	Yes	41.7
		No	58.3
		Not at all	0
		Total	**100**
	Electro-Medical	Yes	55.6
		No	33.3
		Not at all	11.1
		Total	**100**
		Total	**100**
Mymensingh Polytechnic Institute	Civil	Yes	85.7
		No	14.3
		Not at all	0
		Total	**100**
	Mechanical	Yes	80
		No	20
		Not at all	0
		Total	**100**
	Electrical	Yes	81.0
		No	14.3
		Not at all	4.7
		Total	**100**

	Electronics	Yes	91.7
		No	8.3
		Not at all	0
		Total	**100**
	Power (Automobile & RA)	Yes	86.4
		No	9.1
		Not at all	4.5
		Total	**100**
	Electro-Medical	Yes	94.0
		No	6.0
		Not at all	0
		Total	**100**
	Computer	Yes	96.0
		No	4.0
		Not at all	0
		Total	**100**
Rangpur Polytechnic Institute	Civil	Yes	76.5
		No	23.5
		Not at all	0
		Total	**100**
	Electrical	Yes	81.3
		No	6.3
		Not at all	12.4
		Total	**100**
	Mechanical	Yes	92
		No	8
		Not at all	0
		Total	**100**
	Power (Automobile & RA)	Yes	95.7
		No	0
		Not at all	4.3
		Total	**100**
	Electronics	Yes	93.8
		No	6.2
		Not at all	0
		Total	**100**
	Computer	Yes	97
		No	3
		Not at all	0
		Total	**100**
	Electro-Medical	Yes	81.8
		No	18.2

		Not at all	0
		Total	**100**
Rajshahi Polytechnic Institute	Civil	Yes	72.7
		No	27.3
		Not at all	0
		Total	**100**
	Computer	Yes	93.3
		No	6.7
		Not at all	0
		Total	**100**
	Electrical	Yes	88.9
		No	11.1
		Not at all	0
		Total	**100**
Khulna Polytechnic Institute	Civil	Yes	66.7
		No	16.6
		Not at all	16.7
		Total	**100**
	Electrical	Yes	54.5
		No	36.4
		Not at all	9.1
		Total	**100**
	Environmental	Yes	51.5
		No	40.4
		Not at all	8.1
		Total	**100**
	Mechanical	Yes	61.5
		No	15.4
		Not at all	23.1
		Total	**100**
Sylhet Polytechnic Institute	Computer	Yes	76.9
		No	15.4
		Not at all	7.7
		Total	**100**
	Civil	Yes	60
		No	40
		Not at all	0
		Total	**100**
	Electrical	Yes	95
		No	5
		Not at all	0
		Total	**100**

	Mechanical	Yes	75
		No	25
		Not at all	0
		Total	**100**
	Electro-Medical	Yes	90.9
		No	9.1
		Not at all	0
		Total	**100**
	Electronics	Yes	66.7
		No	33.3
		Not at all	0
		Total	**100**
	Power (Automobile & RA)	Yes	91.7
		No	8.3
		Not at all	0
		Total	**100**

Having the Information about Getting Admitted in This Course

Data presented in table-13 shows that the highest (80.66%) got information from the family member/relatives, 15.7% got information from the website, 1.3% got information from coaching centers, and the other 2.42% got information from other sources.

Table-13: Having the Information about Getting Admitted in This Course

Responses	Percentage (%)
Friends and Family	80.66
Website	15.71
Coaching centre	1.3
Others	2.42
Total	**100**

4.5 Satisfaction with the Course

Data presented in table-14 shows that the highest (57%) respondents mentioned that they are satisfied with their courses, 13% are highly satisfied.

Table-14: Satisfaction with the Course

Responses	Percentage (%)
Highly satisfied	13
Satisfied	57
Neither satisfied nor dissatisfied	20
Dissatisfied	6
Highly dissatisfied	4
Total	**100**

4.6 The Effectiveness of This Course for Digital Skill Development

Data presented in table-15 shows that the highest (61%) respondents mentioned that for Digital Skill Development, this course was effective, 9% mentioned this course was very effective.

Table-15: The Effectiveness of This Course for Digital Skill Development

Responses	Percentage (%)
Highly effective	9
Effective	61
Neither effective nor ineffective	22
Ineffective	5
Highly ineffective	3
Total	**100**

4.7 The Effectiveness of This Course for Getting a Job

Data presented in table-16 shows that the highest (58%) respondents mentioned that for getting a job, this course was effective, 7% mentioned this course was very effective.

Table-16: The Effectiveness of This Course for Getting a Job

Responses	Percentage (%)
Highly effective	7
Effective	58
Neither effective nor ineffective	27
Ineffective	5
Highly ineffective	3
Total	**100**

4.8 Effectiveness of the Course

Data present in table-17 shows that the highest (91%) mentioned that the existing method/curriculum was very effective. Likewise, 56.5% received the course materials. The highest (52.9%) mentioned that they Got Sufficient course materials. Likewise, the highest **(**67%) mentioned that the polytechnic institute had satisfactory institutional facilities for the course. The highest **(**98%) mentioned that they had a good number of experienced teachers/trainers to conduct the courses. Similarly, the highest (87.5%)

mentioned that the course curriculum covered all the important topics of this trade. Likewise, the highest (61.63%) respondents mentioned that the relationship between the teachers and students was very good.

Similarly, the highest (61.63%) respondents mentioned that the effectiveness of trade for getting a job is effective and 23.3% mentioned very effective. likewise, the highest (56.53%) respondents mentioned that the effectiveness of trade for skill development on digital literacy and 33.24% mentioned very effective reflected in table-15.

Table-17: Effectiveness of the Course Materials

Responses	Percentage (%)
The effectiveness of the existing method/curriculum for skill development	
Yes	91.1
No	8.9
Total	100
Receiving the course materials	
Yes	56.5
No	43.5
Total	100
Getting Sufficient course materials	
Yes	52.9
No	47.1
Total	100
The polytechnic institute having satisfactory institutional facilities for the course	
Yes	67
No	33
Total	100
Having a good number of experienced teachers/trainers to conduct the courses	
Yes	98.5
No	1.5
Total	100
The Relationship Between the Teachers and Students	
Good	61.63
Excellent	26.28
Fair	12.08
Total	100
The Course Curriculum Covered all the Important Topics of This Trade	
Yes	87.5

Somewhat	4.2
No	8.3
Total	
The Effectiveness of Trade for Getting a Job	
Effective	64
Highly effective	23.3
Neither effective nor ineffective	7.1
Highly ineffective	2.56
Ineffective	5
Total	100
The Effectiveness of Trade for Skill Development on Digital Literacy	
Effective	56.53
Highly effective	33.24
Neither effective nor ineffective	5.68
Highly ineffective	2.56
Ineffective	1.99
Total	**100**

4.9 Opinion of the Diploma Graduates on their Socio-Economic Status

The main purpose of the government is to set up Polytechnic Institutes to increase the productivity promoting skills, to reduce unemployment creating employment opportunities and self-employments for the youth improving their livelihoods.

Therefore, the questionnaire included questions related to the respondent's improvement of livelihoods after completing Diploma graduation. After analyzing the collected data, it shows that the economic condition of 40 percent graduates' family has improved moderately after the graduation while for 20.5 percent it has improved a lot.

As the improvement in economic condition leads to development of other livelihood aspects, the respondents were asked if their housing condition has improved after the graduation. Data shows that more than half of the respondents' (39.6 percent) housing condition has improved after the graduation.

Around 47.7 percent of the graduates reported that they were able to save money at every month after the graduation.

Likewise, respondent's participation in family and community has also increased after the graduation. The participation in community has also increased for 62.2 percent of the graduates reflected in table-18.

Table-18: Opinion of the Diploma Graduates on their Socio-Economic Status

Responses	Percentage (%)
Economic Condition of the Family Improved after Completing Diploma Graduation	
Improved a lot	20.5
Moderately improved	40
No improvement at all	39.5
Total	100
Housing Condition Improved after Completing Diploma Graduation	
Improved a lot	19.6
Moderately improved	39.2
No improvement at all	41.2
Total	100
Able to Save Money at Every Month after Completing Diploma Graduation	
Yes	47.7
No	52.3
Total	100
Participation in Community Increased after Completing Diploma Graduation	
Yes	62.2
No	34.1
Somewhat	3.7
Total	**100**

4.10 The Evaluation/assessment of the Overall Performance of the Practical Session of the Government Polytechnic Institute of Bangladesh

The evaluation/assessment of the overall performance of the practical session is important for taking necessary action by the concerned authority for the further improvement. The report is developed based on the respondents' responses on the Discussion Issues; Duration of the Practical Session; Sufficient Equipment for Practical Class with Good Quality; and Class Room and other Arrangement.

A. Discussion Issues during the Training Period

Data presented in figure-2 shows that 57% of respondents have expressed their opinions on the discussed topics are acceptable and 40% marked as 'not good'. Here the second one is important to take into account. Very few of the respondents have said good or very good about the discussion issues in their technical course.

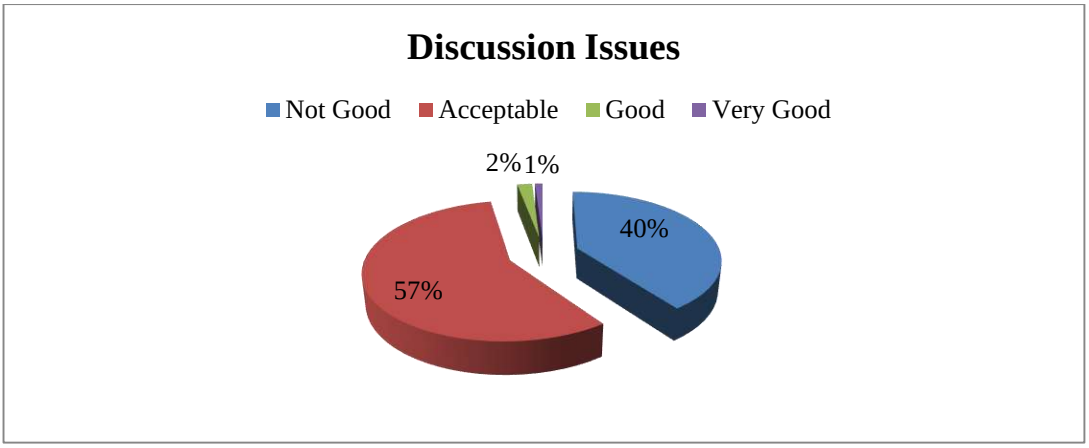


Figure-2: Discussion Issues during the Training Period

B. Duration of the Practical Session

Data presented in figure-3 shows that 49% of respondents expressed their opinion on duration of the practical session as acceptable among the various topics discussed. But 42% have said that the duration of the practical session was not good. Only 7% and 2% respondents have said good and very good about duration of the practical session period respectively. So in designing the course content, it would be important to re-distribute the duration of the practical session.

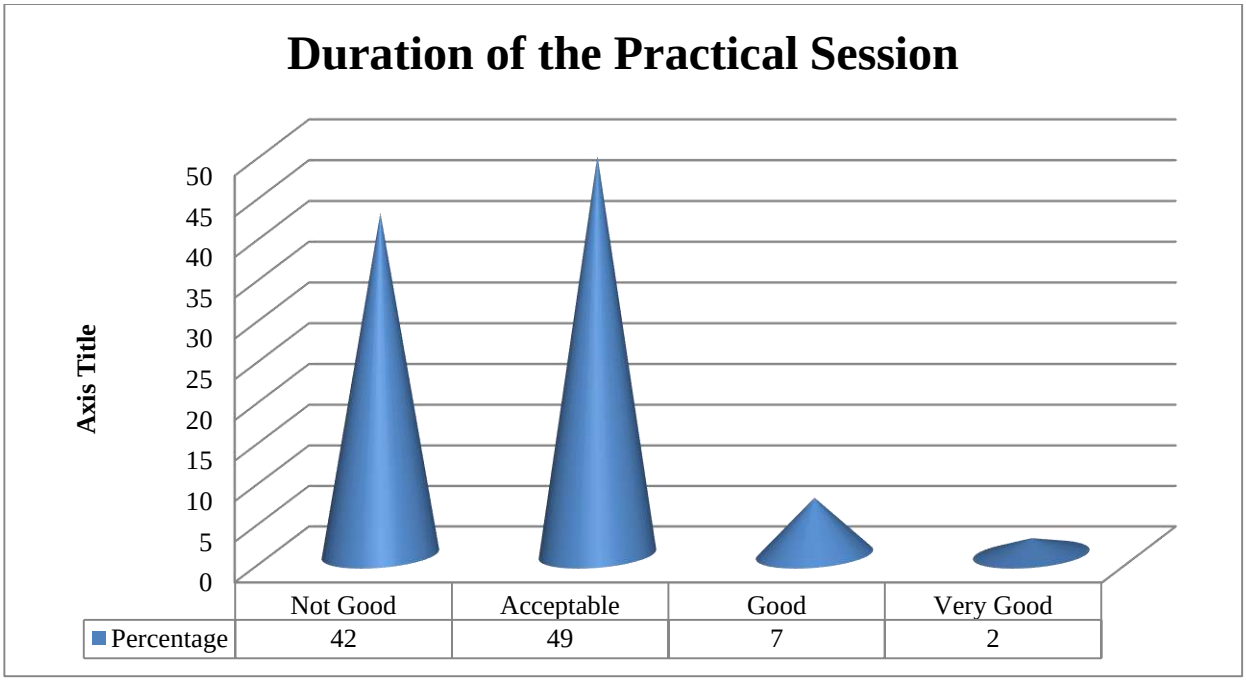


Figure-3: Time Allocation of the Training

D. Sufficient Equipment for Practical Class with Good Quality

Sufficient equipment for practical class used/using in the practical sessions is also very important for ensuring effectiveness and fruitfulness of being skilled. Data presented in figure-4 shows that 51% of respondents (diploma graduates) have expressed their opinion on the quality of the equipment for practical class is acceptable and 42% respondents (diploma graduates) have marked it as 'Not Good'. Here the second one could be considered a growing concern, in order to provide the sufficient equipment for practical class with good quality. Very few of the respondents have said about it as "Good" or "Very Good" about sufficient equipment for practical class with good quality.

Figure-4: Sufficient equipment for practical class with good quality

F. Class Room and other Arrangement

The learning friendly environment is one of the most vital issues related to effectiveness and fruitfulness of any diploma course. Data presented in table-19 shows that 66.2% of respondents have expressed their opinion on classroom and other arrangements were acceptable, 15.4% respondents have marked as "Good" and 15.2% as "Not Good". Only 3.1% respondents have mentioned the classroom arrangements were very well. According to the study report, there is much more to be done by the concerned authorities to create a learning friendly environment by improving classroom and the accessories in the rooms.

Table-19: Class Room and Other Arrangement

Performance	Percentage (%)
Not Good	15.2
Acceptable	66.2
Good	15.4
Very Good	3.1
Total	**100.0**

4.12 Receiving Soft Skill Trainings

Data presented in table-20 shows that Only more than one-sixth (14.9%) mentioned they received Soft Skill Trainings, 65.5% mentioned that they did not receive, and the other 19.6% mentioned that they did not even have the knowledge about soft skills.

Those who have mentioned they received Soft Skill Trainings, among them 39.1% received programming/ machine programming, 17.1% received digital/computer literacy, 14.6% received machine language, and 11.2% received foreign language reflected in table-18. Polytechnic wise and department wise responses on received soft skill trainings by the diploma graduates in the selected polytechnic institutes of Bangladesh reflected in the following table-20(i).

Table-20: Received Soft Skill Trainings

Responses	Percentage (%)
Yes	14.9
No	65.5
Don't know	19.6
Total	100
If Yes, What Those are	
Foreign language (speak and write in English)	11.2
Foreign culture	--
Machine language	8.9
Programming/ machine programming	14.6
Professionalism	39.1
Digital/computer literacy	17.1
Others	9.1
Total	**100**

Table-20 (i): Polytechnic Wise and Department Wise Responses on Received Soft Skill Trainings from the Respective Technologies

Name of the Government Polytechnic Institutes	Name of the Departments in the Respective Polytechnic Institutes	Received Soft Skill Trainings from the Respective Technologies	
		Responses	**Percentage (%)**
Dhaka Polytechnic Institute	Architecture	Yes	20.0
		No	73.3
		Don't know	6.7
		Total	**100**
	Civil	Yes	6.7
		No	93.3
		Don't know	0
		Total	**100**
	Computer	Yes	75
		No	25
		Don't know	0
		Total	**100**
	Electrical	Yes	16
		No	84
		Don't know	0
		Total	**100**
	Electronics	Yes	50
		No	50
		Don't know	0
		Total	**100**
	Environmental	Yes	5
		No	95
		Don't know	0
		Total	**100**
	Mechanical	Yes	19
		No	81
		Don't know	0
		Total	**100**
	Power (Automobile & RA)	Yes	18.8
		No	75.0
		Don't know	6.2
		Total	**100**

Dhaka Mohila Polytechnic Institute	Architecture	Yes	8.2
		No	7.3
		Don’t know	84.5
		Total	**100**
	Electro-Medical	Yes	13.0
		No	8.7
		Don’t know	78.3
		Total	**100**
	Computer	Yes	19.4
		No	69.4
		Don’t know	11.1
		Total	**100**
	Electronics	Yes	30
		No	50
		Don’t know	20
		Total	**100**
Chittagong Polytechnic Institute	Civil	Yes	7
		No	88
		Don’t know	5
		Total	**100**
	Computer	Yes	25
		No	68
		Don’t know	7
		Total	**100**
	Electrical	Yes	14
		No	65
		Don’t know	21
		Total	**100**
	Electronics	Yes	11
		No	71
		Don’t know	18
		Total	**100**
	Environmental	Yes	9
		No	63
		Don’t know	28
		Total	**100**
	Mechanical	Yes	8
		No	73
		Don’t know	19
		Total	**100**

	Power (Automobile & RA)	Yes	29
		No	55
		Don’t know	16
		Total	**100**
Barisal Polytechnic Institute	Civil	Yes	20.7
		No	79.3
		Don’t know	0
		Total	**100**
	Electrical	Yes	16.7
		No	83.3
		Don’t know	0
		Total	**100**
	Mechanical	Yes	18.5
		No	87.5
		Don’t know	0
		Total	**100**
	Power (Automobile & RA)	Yes	8.4
		No	83.3
		Don’t know	8.3
		Total	**100**
	Electronics	Yes	33.3
		No	67.7
		Don’t know	0
		Total	**100**
	Computer	Yes	25
		No	75
		Don’t know	0
		Total	**100**
	Electro-Medical	Yes	11.1
		No	88.9
		Don’t know	0
		Total	**100**
Mymensingh Polytechnic Institute	Civil	Yes	30
		No	25
		Don’t know	45
		Total	**100**
	Mechanical	Yes	20
		No	60
		Don’t know	20
		Total	**100**

	Electrical	Yes	15.8
		No	21.9
		Don’t know	62.3
		Total	**100**
	Electronics	Yes	13.3
		No	31.6
		Don’t know	55.1
		Total	**100**
	Power (Automobile & RA)	Yes	9.1
		No	77.3
		Don’t know	13.6
		Total	**100**
	Electro-Medical	Yes	7
		No	93
		Don’t know	0
		Total	**100**
	Computer	Yes	20
		No	10
		Don’t know	70
		Total	**100**
Rangpur Polytechnic Institute	Civil	Yes	9
		No	91
		Don’t know	0
		Total	**100**
	Electrical	Yes	89
		No	11
		Don’t know	0
		Total	**100**
	Mechanical	Yes	4
		No	96
		Don’t know	0
		Total	**100**
	Power (Automobile & RA)	Yes	8
		No	92
		Don’t know	0
		Total	**100**
	Electronics	Yes	7
		No	93
		Don’t know	0
		Total	**100**

	Computer	Yes	11
		No	89
		Don’t know	0
		Total	**100**
	Electro-Medical	Yes	8
		No	92
		Don’t know	0
		Total	**100**
Rajshahi Polytechnic Institute	Civil	Yes	18.2
		No	44.6
		Don’t know	37.2
		Total	**100**
	Computer	Yes	6.7
		No	52.8
		Don’t know	40.5
		Total	**100**
	Electrical	Yes	5.3
		No	11.1
		Don’t know	83.6
		Total	**100**
Khulna Polytechnic Institute	Civil	Yes	50
		No	33.3
		Don’t know	16.7
		Total	**100**
	Electrical	Yes	9.1
		No	90.9
		Don’t know	0
		Total	**100**
	Environmental	Yes	7
		No	93
		Don’t know	0
		Total	**100**
	Mechanical	Yes	23.1
		No	69.2
		Don’t know	7.7
		Total	**100**
Sylhet Polytechnic Institute	Computer	Yes	30.8
		No	69.2
		Don’t know	0
		Total	**100**

	Civil	Yes	40
		No	40
		Don’t know	20
		Total	**100**
	Electrical	Yes	33.3
		No	66.7
		Don’t know	0
		Total	**100**
	Mechanical	Yes	16.7
		No	83.3
		Don’t know	0
		Total	**100**
	Electro-Medical	Yes	5
		No	95
		Don’t know	0
		Total	**100**
	Electronics	Yes	8.3
		No	91.7
		Don’t know	0
		Total	**100**
	Power (Automobile & RA)	Yes	7
		No	93
		Don’t know	0
		Total	**100**

4.12 Achieving any Specific Skill from the Internship Opportunity

Data presented in table-21 shows that more than one-thirds of the diploma graduates (40%) received specific skill from the internship opportunity, and the other 60% have not received specific skill from the internship opportunity.

Of those who have mentioned they received specific skill from the internship opportunity, among them 16% received programming/ machine programming, 22% received digital/computer literacy and machine language respectively, 18% received machine language, 15% received on professionalism and 17% received foreign language reflected in table-19. Polytechnic wise and department wise responses on achieved any specific skill from the internship opportunity by the diploma graduates in the selected polytechnic institutes of Bangladesh reflected in the following table-21(i).

Table-21: Achieved any Specific Skill from the Internship Opportunity

Responses	Percentage (%)
Yes	40
No	60
Total	**100**
If Yes, What Those are	
Foreign language (speak and write in English	17
Machine language	18
Programming/ machine programming	16
Professionalism	25
Digital/computer literacy	22
Others	2
Total	**100**

Table-21 (i): Polytechnic Wise and Department Wise Responses on Achieved any Specific Skill from the Internship Opportunity

Name of the Government Polytechnic Institutes	Name of the Departments in the Respective Polytechnic Institutes	Achieved any Specific Skill from the Internship Opportunity	
		Responses	**Percentage (%)**
Dhaka Polytechnic Institute	Architecture	Yes	13.3
		No	86.7
		Somewhat	0
		Total	**100**
	Civil	Yes	16.3
		No	83.7
		Somewhat	0
		Total	**100**
	Computer	Yes	95.8
		No	4.2
		Somewhat	0
		Total	**100**
	Electrical	Yes	7
		No	93

		Somewhat	0
		Total	**100**
	Electronics	Yes	50
		No	50
		Somewhat	0
		Total	**100**
	Environmental	Yes	14.3
		No	85.7
		Somewhat	0
		Total	**100**
	Mechanical	Yes	33.3
		No	66.7
		Somewhat	0
		Total	**100**
	Power (Automobile & RA)	Yes	37.5
		No	62.5
		Somewhat	0
		Total	**100**
Dhaka Mohila Polytechnic Institute	Architecture	Yes	16.7
		No	83.3
		Somewhat	0
		Total	**100**
	Electro-Medical	Yes	95.7
		No	4.3
		Somewhat	0
		Total	**100**
	Computer	Yes	88.9
		No	11.1
		Somewhat	0
		Total	**100**
	Electronics	Yes	40
		No	60
		Don’t know	0
		Total	**100**
Chittagong Polytechnic Institute	Civil	Yes	14
		No	86
		Somewhat	0
		Total	**100**
	Computer	Yes	11
		No	89
		Somewhat	0
		Total	**100**

	Electrical	Yes	18
		No	82
		Somewhat	0
		Total	**100**
	Electronics	Yes	13
		No	87
		Somewhat	0
		Total	**100**
	Environmental	Yes	11
		No	89
		Somewhat	0
		Total	**100**
	Mechanical	Yes	7
		No	93
		Somewhat	0
		Total	**100**
	Power (Automobile & RA)	Yes	9
		No	91
		Somewhat	0
		Total	**100**
Barisal Polytechnic Institute	Civil	Yes	33.3
		No	66.7
		Somewhat	0
		Total	**100**
	Electrical	Yes	16.7
		No	83.3
		Somewhat	0
		Total	**100**
	Mechanical	Yes	41.7
		No	58.3
		Somewhat	0
		Total	**100**
	Power (Automobile & RA)	Yes	41.3
		No	58.7
		Somewhat	0
		Total	**100**
	Electronics	Yes	8.3
		No	91.7
		Somewhat	0
		Total	**100**
	Computer	Yes	66.7
		No	33.3

		Somewhat	0
		Total	**100**
	Electro-Medical	Yes	22.2
		No	77.8
		Somewhat	0
		Total	**100**
Mymensingh Polytechnic Institute	Civil	Yes	80
		No	20
		Somewhat	0
		Total	**100**
	Mechanical	Yes	30
		No	70
		Somewhat	0
		Total	**100**
	Electrical	Yes	89.5
		No	10.5
		Somewhat	0
		Total	**100**
	Electronics	Yes	98
		No	2
		Somewhat	0
		Total	**100**
	Power (Automobile & RA)	Yes	31.8
		No	68.2
		Somewhat	0
		Total	**100**
	Electro-Medical	Yes	3
		No	97
		Somewhat	0
		Total	**100**
	Computer	Yes	93
		No	7
		Somewhat	0
		Total	**100**
Rangpur Polytechnic Institute	Civil	Yes	17.3
		No	82.7
		Somewhat	0
		Total	**100**
	Electrical	Yes	7.7
		No	92.3
		Somewhat	0
		Total	**100**

	Mechanical	Yes	9.6
		No	80.4
		Somewhat	0
		Total	**100**
	Power (Automobile & RA)	Yes	7.3
		No	92.7
		Somewhat	0
		Total	**100**
	Electronics	Yes	8.6
		No	91.4
		Somewhat	0
		Total	**100**
	Computer	Yes	7.1
		No	92.9
		Somewhat	0
		Total	**100**
	Electro-Medical	Yes	27.3
		No	72.7
		Somewhat	0
		Total	**100**
Rajshahi Polytechnic Institute	Civil	Yes	90.9
		No	9.1
		Somewhat	0
		Total	**100**
	Computer	Yes	93.7
		No	6.3
		Somewhat	0
		Total	**100**
	Electrical	Yes	89.9
		No	10.1
		Somewhat	0
		Total	**100**
Khulna Polytechnic Institute	Civil	Yes	58.3
		No	41.7
		Somewhat	0
		Total	**100**
	Electrical	Yes	12
		No	88
		Somewhat	0
		Total	**100**
	Environmental	Yes	4
		No	96

		Somewhat	0
		Total	**100**
	Mechanical	Yes	38.5
		No	61.5
		Somewhat	0
		Total	**100**
Sylhet Polytechnic Institute	Computer	Yes	92.3
		No	7.7
		Somewhat	0
		Total	**100**
	Civil	Yes	40
		No	60
		Somewhat	0
		Total	**100**
	Electrical	Yes	41.7
		No	58.3
		Somewhat	0
		Total	**100**
	Mechanical	Yes	25
		No	75
		Somewhat	0
		Total	**100**
	Electro-Medical	Yes	36.4
		No	63.6
		Somewhat	0
		Total	**100**
	Electronics	Yes	41.7
		No	58.3
		Somewhat	0
		Total	**100**
	Power (Automobile & RA)	Yes	8.3
		No	91.7
		Somewhat	0
		Total	**100**

4.13 The Factors Contributing to the Employability of the Diploma Graduates at Home and Abroad

Data presented in table-22 shows that 29% mentioned that technical skill is considered as a factor contributing to the employability of the diploma graduates at home and abroad, 23% mentioned job experience, 15% mentioned computer/digital literacy, 9% mentioned

good GPA, 11% mentioned foreign language (speak and write in English), and 8% mentioned professional skill.

Table-22: The Factors Contributing to the Employability of the Diploma Graduates at Home and Abroad

Responses	Percentage (%)
Technical skill	29
Job experience	23
Computer/digital literacy	15
Good CGPA	9
Foreign language (speak and write in English)	11
Professional skill	8
Other	5
Total	**100**

4.14 Challenges (discrimination) for the Migration Workers (Diploma Graduates) for Overseas Employment

Data presented in table-23 shows that the highest (81%) mentioned they had to face much discrimination for overseas employment and the other 19% mentioned they did not face any discriminations.

Those who mentioned that they had to face much discrimination for overseas employment, among them 43% paid less than that of migration workers coming from the other countries, 12% mentioned the foreign employers had a bad concept on the Bangladeshi workers, 21% were compel to shifting occupation, 8% mentioned Poor skills on soft skills and the other (10%) mentioned that they get lower-level jobs reflected in table-23.

Table-23: Challenges (discrimination) Faced by the Migration Workers (Diploma Graduates) in Overseas Employment

Responses	Percentage (%)
Yes	81
No	19
Total	**100**
Types of Discrimination	
Paid less	43
Bad concept on Bangladeshi workers	12
Compel to shifting occupation	21
Lower-level job	10
Poor skills on soft skills	8
Total	**100**

Chapter-V: Policy Implications

5.1 Policy Implications

The following section is for the policy-makers and the planners to link with the decision-making process. The following policy-level implications are suggested from the study findings:

SL.	Key Findings of the Study	Corresponding Policy Implications
i.	Emphasize on Quality of Technical Education	Bangladesh Government should emphasize on quality of technical education, especially on diploma courses of the government institutes to capitalize the advantage of demographic dividend to be successfully graduated from LDCs to Developing one by 2016, achieving SDGs by 2030 and the Perspective Plan 2041.
ii.	Skill Development of the Diploma Graduates	It could be compulsory for the diploma graduates to ensure minimum skills but standard. The government polytechnic institutes should be active and dynamic to ensure the respective skills of the graduates.
iii.	Curriculum Needs to be Upgraded	Curriculum needs to be upgraded maintaining global standard considering as per demands of the market (both domestic and foreign)
iv.	Learning Materials (machinery tools and equipment) Needs to be Upgraded	Government polytechnic institutes should upgrade their learning materials (machinery tools and equipment) in course of time so that the diploma graduates can be skilled adapting with the current technologies.
v.	Well-equipped lab with modern facilities (technologies)	It is important to introduce well-equipped lab with modern facilities (technologies) in every polytechnic institute, so that the graduates can have the opportunity to practice more and adapt with the current technologies.
vi.	Curriculum Needs to be Upgraded	Curriculum needs to be upgraded maintaining global standard considering as per demands of the market (both domestic and foreign)
vii.	Inclusive Curriculum	An inclusive curriculum can be developed discussing

		with representatives of the polytechnic institutes, owners of the industries, and employers of different companies and organizations, etc.
viii.	A Specialized Research Cell	A Specialized Research Cell needs be set up in every polytechnic institute promoting the quality of education and ensuring skills of the diploma graduates.
ix.	The Development of Bangladesh Technical Teachers Training Institute and Trainings of Teachers (ToT)	Bangladesh Technical Teachers Training Institute can be developed ensuring global standard. Trainings of Teachers (ToT) should be compulsory maintaining a quality standard.
x.	The Invitation of the Owners, Representatives and Experts of the Industries	Industry experts, owners or representatives could be invited in various programs organized by polytechnic institutes so that the teachers and students can make a relationship with them exchanging knowledge on demands of the industries and supply from the polytechnic institutes end.
xi.	Achieving Specific Skill based on their Comparative Advantage	The Diploma Graduates should achieve a specific skill based on their comparative advantage.
xii.	Emphasizing on Soft Skill Development	The government polytechnic institutes should emphasize on soft skill development (i.e**.,** foreign language, foreign culture, machine language/programming, professionalism, digital/computer literacy, etc.) of the Diploma Graduates in Bangladesh.

Chapter-VI: Challenges, Recommendations and Conclusion

6.1 Challenges of the Diploma Graduates and Polytechnic Institutes in Bangladesh

The notable challenges which are the impediments not to ensure the quality of education of government polytechnic institutes of Bangladesh are as follows:

i. There is lack of trained and skilled instructors in the training institutes;
ii. Lack of updated sufficient materials, equipment, labs and other infrastructures for conducting practical sessions;
iii. Lack of skills (i.e., occupational/professional skill, communication skill, interpersonal skill, computer and digital literacy, etc.) of the diploma graduates;
iv. Lack of soft skills (i.e., foreign language, foreign culture, machine language/programming, etc.)
v. Limited capacity of the existing labs in the technical institutes;
vi. Number of every batch for practical sessions is much more than that of the capacity of the labs;
vii. Duration of the practical session is short;
viii. Lack of market linkage with the polytechnic institutes;
ix. Students emphasize on getting a good grades rather than their skill development in their respective trades;
x. Harmonization gap between industries and the polytechnic institutes; and
xi. Best standard for practical class is 20 students per batch but the course instructors of the government polytechnic institutes are now taking practical class 50 students per batch.

6.2 Recommendations from the Study for the Diploma Graduates and Polytechnic Institutes in Bangladesh

There are some recommendations for the Diploma Graduates and Polytechnic Institutes in Bangladesh to ensure the quality of education of government polytechnic institutes of Bangladesh.

Recommendations for the Polytechnic Institutes

i. The country needs to emphasize on skill development of the labor force, especially of the youth to meet up the growing demands of the networking, internet service, and computer database management sectors promoting and ensuring the quality education of government polytechnic institutes of Bangladesh;
ii. The technical institutes need to be upgraded according to global standard. If needed, international trainers can be recruited in the institutes;
iii. Learning materials (machinery tools and equipment) needs to be updated;
iv. It is important to introduce well-equipped lab in every polytechnic institute, so that the graduates can have the opportunity to practice more;
v. Curriculum should be developed discussing with representatives of the polytechnic institutes, owners of the industries, and employers of different companies and organizations, etc.
vi. Development of industrial-educational institution relations, formulation of course curriculum as per the demand of industries;
vii. A complete and special strong research cell should be developed promoting diploma education and improvement of the government polytechnic institutes in Bangladesh.

Recommendations for the Diploma Graduates

i. The Diploma Graduates should emphasize on soft skill development (i.e**.,** foreign language, foreign culture, machine language/programming, professionalism, digital/computer literacy, etc.);
ii. The Diploma Graduates should complete certificate courses such as networking, digital marketing, cyber-attack/security, E-commerce, 3D, graphics, video editing, etc.;
iii. The Diploma Graduates should be skillful in a specific skill based on their comparative advantage;
iv. Specification of a specific occupation for every student; and
v. The diploma graduates can be certified nationally based on their specific skills; and
vi. Apprenticeship programs could be encouraged ensuring that diploma graduates can have more practical exposure from various reputed industries in Bangladesh.

Recommendations for the Course Instructors/Teachers

It would be really inequitable to anticipate having skilled diploma graduates without promoting the skills of the course instructors.

i. Bangladesh Technical Teachers Training Institute can be developed ensuring global standard;
ii. Trainings of Teachers (ToT) should be compulsory maintaining a quality standard;
iii. Industry experts, owners or representatives could be invited in various programs organized by polytechnic institutes so that the teachers and students can make a relationship with them exchanging knowledge on demands of the industries and supply from the polytechnic institutes end.

6.3 Conclusion of the Study

There is a huge demand of skilled worker in the global labour market. But due to lack of enough skilled manpower, Bangladesh is still sending the unskilled workers for overseas employment. Technical institutes can include courses which will meet the global demand. The findings indicate that most of the diploma graduates were able to get job within 6 months after the graduation. Also, some of the graduates were able to create self-employment after the graduation. Feedback was also collected from the graduates about the overall effectiveness of the trade. It shows that most of the graduates related to the trade effective for getting job and self-employment creation.

Bangladesh has remarkably progressed in the socio-economic status of the people of the country. Government polytechnic institutes of Bangladesh has been playing a very important role in human resource development creating skilled labor force, increasing productivity, improving quality of life (standard of livings) and promoting national output, etc. Government polytechnic institutes of Bangladesh covers courses and programs in Architecture, Civil, Chemical & Food, Computer, Electrical, Electronics, Environmental, Mechanical, Power (Automobile & RA) and Non-tech Department, etc.

Bangladesh is now in a right move implementing the 8th Five Year Plan considered as a first one that would support to achieve LDC graduation by 2026, SDG goals by 2030, the Perspective Plan 2041, and Bangladesh Delta Plan 2100 without losing our achievements so far on education, public health, women empowerment, etc. Bangladesh would become a developed country by 2041 capitalizing the advantage of demographic dividend creating skilled manpower, especially the skills of the youth and promoting of technical and vocational education, especially ensuring the quality of education of government polytechnic institutes of Bangladesh.

Knowledgeable and skilled workforce is one of those assets which are neither get depreciated nor diminished as long as they are developed efficiently. As a result, developing this asset will ensure higher economic progress for Bangladesh.

References

Attwell, G. (1999). New roles for vocational education and training teachers and trainers in Europe: A new framework for their education. Industrial and Commercial Training, 31(5), 190-200. http://dx.doi.org/10.1108/00197859910284782

Bangladesh Bureau of Statistics (BBS) (2017). Labour Force Survey 2016-17.

BMET, 2017. Overseas Employment (Month Wise) in 2017, Statistical Reports, Available at: http://www.old.bmet.gov.bd/BMET/viewStatReport.action.

Becker, G. (1962). Investment in human capital: A theoretical analysis. Journal of Political Economy 70, 9-49.

Cornford, I. R. (2005). VE. In: English, LM. (ed.) International Encyclopedia of adult Education. Palgrave Macmillan.

Elbushari, I., E., Aktaruzzaman, M. (2012). Identification of the problems and prospects in vocational education and training (VET) of Bangladesh, Asian journal of Management Sciences and education, vol. 1(1).

Esme, İ. (2007). Current Status and Problems of Vocational and Technical Education. Education Council International Vocational and Technical Education. Ankara.

Freiburg, L. (2010). Technical and Vocational Education and Training: A False Promise or Truly Promising? A comparison of perspectives on the role of Technical and Vocational Education and Training (TVET) in Ghana.

Gelişli, Y. (2007). Using Instructional Technology Perspective Evaluation of Educational Institutions. Journal of Turkish Educational Sciences , 5 (1).

Haider, A. (2019). 'Demographic dividend' could turn into a 'demographic disaster'. The Daily Star. Retrieved from https://www.thedailystar.net/lifestyle/perspective/news/demographic-dividend-could-turn-demographic-disaster-1709272.

Islam, S. (2021). International Journal of Vocational and Technical Education Research Vol.7, No.1 pp.43-68, 2021.

Newaz, T., Faruquee, M. and Sadia, F. (2013). Vocational education and training in Bangladesh: Why it is not working?, International Journal of Research Studies in Education, Volume 2 Number 4, 29-40, DOI: 10.5861/ijrse.2013.261.

Olkun, S. &. (1999). An Assessment of School-to-Work Transition in a Vocational and Technical High School in Ankara,Turkey. American Educational Research Association (AERA), Montreal, Canada. (ERIC No. ED429194).

Rafique, A. (1994). The development of technical and vocational education in Bangladesh--A case study in quality improvement. Case studies on technical and vocational education in Asia and the Pacific. RMIT Report for UNESCO.

Rahman, M. M. and Raihan, M. A. (2013). Eradicating Prime Problems of TVET for Ensuring Worth Human Resources in Bangladesh. International Journal of Engineering Sciences and Research Technology, 2(10).

Sezgin, İ. (2000). "Curriculum Development in Vocational and Technical Education". Ankara. Nobel Publishing.

SFYP. (2011). Sixth Five Year Plan FY 2011 – 2015, Ministry of Planning Report.

Shibli, A. (2021). Graduation to Middle-Income Status: Bangladesh must address institutional weaknesses. The Daily Star.Retrieved from https://www.thedailystar.net/opinion/open-dialogue/news/graduation-middle-income-status-bangladesh-must-address-institutional-weaknesses-2915236.

Tilak, J. (2002). Education and Poverty [Online].In Melin, Mia (Ed.) Education– a way out of poverty?Research presentations at the Poverty Conference 2001 (pp. 12-23).

Unterhalter, Elaine (2007). Gender, Schooling and Global Social Justice. London: Routledge.

Ziderman, A. (1997). National programs in technical and vocational education: Economic and education relationships. Journal of Vocational Education & Training , 49 (3), 351-366.

Appendix-1: Survey Questionnaire on Diploma Graduates

Serial No. | | | | |

Survey Questionnaire
of

The Study on Diploma Graduates of Government Polytechnic Institute at Selected Areas of Bangladesh

Respondents' Type: Diploma and Engineering Graduates of Government Polytechnic Institutes in Bangladesh

Name of the Respondent:
Name of the Institute:
Mobile No.:

Quality Control Officer: ……
Interviewer Name: …….
Date of Interview: ……..
Start time: …… End: …….

Study Conducted By

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June 2022

SL	Question	Answer	Code
	Section 1: Background Information		
1.	Name of the respondent		
2.	Age	.....……..Years	
3.	Sex	Female	1
		Male	2
		Transgender	3
4.	Name of the Government Polytechnic Institute that you belonged to.	Dhaka Polytechnic Institute	1
		Chittagong Polytechnic Institute	2
		Mymensingh Polytechnic Institute	3
		Khulna Polytechnic Institute	4
		Barishal Polytechnic Institute	5
		Rajshahi Polytechnic Institute	6
		Sylhet Polytechnic Institute	7
		Dhaka Mohila Polytechnic Institute	8
		Rangpur Polytechnic Institute	9
5.	Which course did you participate at this institution?		
6.	Would you please mention the purpose of attending this course?	Skill development	1
		To be a good engineer	2
		Personal interest	3
		Achieving certificate	4
		Institutional requirement	5
		For getting a job	6
		Others	99
7.	Have you completed or been completing B.S.C after Diploma Graduation?	Yes	
		No	
8.	If Yes, why?		
9.	What is your current employment status?	Employed	1
		Unemployed	2

10.	If employed, what is your monthly income?	Less than BDT. 10000	1
		BDT. 10000-20000	2
		BDT. 20001-30000	3
		BDT. 30001-40000	4
		BDT. 40001-50000	5
		More than BDT. 50000	6
11.	Types of job	Government job	1
		Corporate executives	2
		Technicians and associate professionals	3
		Service workers (health workers, bankers, etc.)	4
		Shop and market sales workers	5
		Skilled agriculture	6
		Craft and related trades workers	7
		Plant and machine operators	8
		Clerks	9
		Others	99
12.	If unemployed, how long have you been waiting for a job?	Less than 6 months	1
		Less than 1 year	2
		More than 1 year	3
		More than 2 years	4
13.	If you were a migrant worker, do you face any discrimination?	Yes	1
		No	2
14.	If yes, what are those?		
15.	What was your passing year?	2019	1
		2018	2
		2017	3
		2016	4
		2015	5
16.	From where did you get the information about this course?	Notice board	1
		Phone call	2
		Email	3

		Website	4
		Course coordinator (face to face)	5
		Advertisement on the national daily	6
		Others	99
17.	Do you notice adequate job circulars related to the course?	Yes	1
		No	2
		Not at all	3
18.	Please mention the training method/curriculum followed during the course.	Oral presentation	1
		Video presentation	2
		Both oral and video presentation	3
		Learning through practicing	4
		Internship	5
		Others	99
19.	Did you find the method/curriculum effective?	Yes	1
		No	2
20.	Did you receive any course materials?	Yes	1
		No	2
21.	Were the materials sufficient?	Yes	1
		No	2
22.	Does this polytechnic institute have satisfactory institutional facilities for the course?	Yes	1
		No	2
23.	Does it have a good number of experienced teachers/trainers to conduct the courses?	Yes	1
		No	2
24.	What was the relationship between the teachers and students?	Excellent	1
		Good	2
		Fair	3
		Poor	4
		Very poor	5
25.	Do you think the course curriculum covered all the important topics of this subject?	Yes	1
		No	2
		Somewhat	3
26.	How much are you satisfied with the course?	Highly satisfied	1
		Satisfied	2

		Neither satisfied nor dissatisfied	3
		Dissatisfied	4
		Highly dissatisfied	5
27.	How this course is effective for digital skill development?	Highly effective	1
		Effective	2
		Neither effective nor ineffective	3
		Ineffective	4
		Highly ineffective	5
28.	How much the course is effective for getting a job?	Highly effective	1
		Effective	2
		Neither effective nor ineffective	3
		Ineffective	4
		Highly ineffective	5
29.	Have you found the courses in line with your demand and per your interest?	Yes	2
		No	2
		Somewhat	3
30.	The skills and knowledge you have acquired in your organization useful in your current profession?	Yes	1
		No	2
		Somewhat	3
Section 2: Livelihood development			
31.	Does the economic condition of your family improve after completing graduation?	Improved a lot	1
		Moderately improved	2
		No improvement at all	3
32.	Does your housing condition improve after diploma graduation?	Improved a lot	1
		Moderately improved	2
		No improvement at all	3
33.	Are you able to save money every month after diploma graduation?	Yes	1
		No	2
34.	Does your participation in the community increase after completing diploma graduation?	Yes	1
		No	2
		Somewhat	3
Section 3: the Evaluation/assessment of the Overall Performance of the Practical Session			
35.	Opinion on the discussion issues (theoretical knowledge)	□ Very Good	
		□ Good	

		□ Acceptable	
		□ Not Good	
		□ Not Acceptable	
36.	Duration of the practical session	□ Very Good	
		□ Good	
		□ Acceptable	
		□ Not Good	
		□ Not Acceptable	
37.	Sufficient equipment for practical class with good quality	□ Very Good	
		□ Good	
		□ Acceptable	
		□ Not Good	
		□ Not Acceptable	
38.	Learning environment and other arrangement like lab and classroom	□ Very Good	
		□ Good	
		□ Acceptable	
		□ Not Good	
		□ Not Acceptable	
39.	Have you received soft skill trainings? (i.e., foreign language, foreign culture, machine language/programming, professionalism, digital/computer literacy, etc.?	Yes	
		No	
		Don't know	
40.	If yes, what are those?	Foreign language	
		Foreign culture	
		Machine language	
		Programming/ machine programming	
		Professionalism	
		Digital/computer literacy	
		Others	
41.	Did you learn any specific skill from the internship opportunity?	Yes	
		No	

42.	If yes, what are those?		
43.	What are the factors contributing to the employability of the Diploma Graduates at home and abroad?		
Section 4: Opinions and Suggestions			
44.	Please mention the critical challenges to addressing the job demands and getting a job (current and future).		
45.	Please mention the possible recommendations to address the job demands (current and future).		
46.	What are your suggestions to make the course more effective?		
47.	In your opinion, what more or new training courses can be included in their program based on the local, and global demands?		

Appendix-2: KII Checklist on Diploma Graduates

Serial No. | | | | |

Key Informant Interview (KII) Checklist

on

Study on Diploma Graduates of Government Polytechnic Institute at Selected Areas of Bangladesh

Types of Key Informants: Head of the Polytechnic Institutes, teachers, employers, TVET experts, etc.

Name of the Respondent:	
Age:	Occupation:
Mobile No.:	

Date of Interview: ……..
Quality Control Officer: ……
Interviewer Name: ……
Start time: …… End: …….

Study Conducted By

Bangladesh Institute of Social Research (BISR) Trust

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For the Teachers/trainers

1. In what course(s) are you involved in this institution?

Course Title	**Major Contents**	**Duration**	**The material used/using**	**Total Participants in the Batch**	**Remarks**

2. How long have you been involved in this institution?
   □ One year □ Two years □ Three years or more
3. Did you complete ToT?

□ Yes □ No □No comment □ Don't know

4. Do you think that the existing curriculum is relevant to the needs of the graduates? (Check one answer)

□ Yes □ No □No comment □ Don't know

   a. If yes, please explain, shortly:
5. Do you think that the duration of the practical session is sufficient for achieving the given objectives?
   □ Yes □ No □No comment □ Don't know
   a. Please explain, shortly:
6. How useful is the practical learning material provided during the courses?

□ Very highly □Highly□ Low□ Very low □ Don't know

   a. Please explain, shortly:
7. Which specific part or section of the curriculum have you found most useful for the preferred jobs of diploma graduates?
8. What are the factors contributing to the employability of graduates at home and abroad?

9. Please mention the critical challenges to address the job demands and to get a job (current and future).

10. Please mention the possible recommendations to address the job demands (current and future), to improve the curriculum and practical learning sessions including learning materials.

For the Employers

1. What kind of skilled workers do you need for your enterprise?

2. Do you get the expected skilled employees as per your requirements for every position?

3. What kind of employees do you recruit more? temporary, seasonal, or permanent?

4. In your opinion, what kind of skills would be needed for your enterprise in the next 3-5 years?

5. In your opinion, the demand would be increased by what percentage?

6. Do you think there would be enough supply of skilled workers? If yes why? If not, why?

7. What skill development programs/trade courses should be included in the diploma institutes to produce more market-driven workers?

8. Opinion about the current status of sector-wise education and its workforce supply capacity.

9. Opinion about the existing gap in the sector-wise workforce demand.

10. What are the factors contributing to the employability of graduates at home and abroad?

11. Do you have any scope or opportunity to collaborate (financially) with the training institutes for producing more skilled workers?

12. Recommendations on capacity building to meet up the supply-demand gap of skilled workers in the local and the global context.

13. Please mention the critical challenges to address the job demands and to get a job (current and future).

14. Please mention the possible recommendations to address the job demands (current and future), to improve the curriculum and practical learning sessions including learning materials.

For the Head of the Polytechnic Institute and the TVET Expert

1. What skills programs/trade courses should be included in the diploma institutes to produce more market-driven workers?

2. Opinion about the current status of sector-wise education and its workforce supply capacity.

3. Opinion about the existing gap in sector-wise workforce demand.

4. Opinion on the existing curriculum.

5. Opinion on the practical learning material.

6. Opinion on the duration of practical sessions.

7. What are the factors contributing to the employability of graduates at home and abroad?

8. Please mention the critical challenges to addressing the current job demands in the home and abroad market.

9. Please mention the critical challenges of the diploma and engineering graduates for being competent for the future job demands at home and abroad market.

10. Please mention the critical challenges faced by the Government Polytechnic Institutes of Bangladesh and the way forward.

11. Please mention the critical challenges to address the job demands and to get a job (current and future).

12. Please mention the possible recommendations to address the job demands (current and future), to improve the curriculum and practical learning sessions including learning materials.
13. Please mention the possible recommendation for the graduates to be skillful and competent for job markets at home and abroad and for the Government Polytechnic Institutes of Bangladesh.
14. Recommendations on capacity building to meet the supply-demand gap of skilled workers in the local and global context.

Date form filled out: _____

Thank you very much.

বাংলাদেশ শিক্ষাতথ্য ও পরিসংখ্যান ব্যুরো (ব্যানবেইস)
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