Research Report

Title: Participation Barrier of Differently Abled Person in TVET: A Case Study in Dhaka Polytechnic Institute

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Declaration

This research is my original work and has not been presented in anywhere for certification. The thesis has been complemented by referenced works dully acknowledged, where text, data, or table have been borrowed from other works-including the internet. The sources are specifically accredited through referencing in accordance with anti-plagiarism regulation.

Signature………………….. Date………….

List of Abbreviation and Acronyms:

BBDN: Bangladesh Business and Disability Network

BBS: Bangladesh Bureau of Statistic

BTEB: Bangladesh Technical Education Board

CTE: Career Technical Education

CWDs: Children with Disabilities

DAP: Differently Able Person

DPOs: Disable Peoples Organizations

DPI: Dhaka Polytechnic Institute

DTE: Directorate of Technical Education

IE: Inclusive Education

IEP: Individualized Educations Program

ILO: International Labour Organization

IWRC: Individual Work Readiness Certificate

NSDC: National Skill Development Council

NTVQF: National Technical and Vocational Qualification Frame Work.

PWDs: People with Disabilities

SE: Special Education

SWDs: Students with Disabilities.

TVET: Technical and Vocational Education and Training

UNDP: United Nations Development Program

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This effort will be worth wide if this report could serve as a useful input in the key decision-making process for improving the disability inclusion in TVET of Bangladesh. Let us all work for building a better future, beautiful Bangladesh.

Dr. Reza Hasan Mahmud.

Abstract

Education is a basic human right and considered by many as a key for the national development. We must empower people with disabilities by removing the barriers which are preventing them for getting a quality education and thus, finding a decent carrier in their future.

This study sought to investigate the different aspects of disable learner's participation barriers in Bangladesh TVET. According to objectives, this study has adopted mixed methods and case study design for analysis. Dhaka Polytechnic Institute was taken for case study.

Despite the policy, study reveals that disable learner's participation is far behind the expectation. Very few mild physically impaired disable learner's were observed during the study. Management believes that student with mild physical impaired are more likely to be accepted for TVET.

Result found that physical environments of the selected TVET institute is not accessible by person with disabilities particularly by persons with visual and physical impairments. Absence of ramps/elevators in academic and hostel building, disable supportive washroom, learning materials, reasonable accommodation in class room and workshops have largely reduced enrollment scope in that institute.

Moreover, study identified that, teachers are positive about disable student's enrollment. But have no time in his regular classes or attitude to take extra care for them. Study observed that teachers are not trained and motivated, they have no learning materials. The activity of development partners including NGOs, DPOs and civil societies are not observed to co-operate disable learner's inclusion in TVET institute.

Barriers observed in institutional practice and attitude. Welcoming, motivation & counseling, problem solving, information sharing is not there. Study observed lack of management initiative to developed disable supportive environment in the institute which ultimately creates a barrier for scope of disable learner's enrollment

Disable students are also barred from enrolling due to policies that provide cut-off point marks and rigid entry behavior of TVET courses. Stake holders thinks that the participation barriers are lack of publicity, not interested about TVET, considering technical education not suitable for PWDs, financial condition of family, long course duration, negative attitude & stigma of family, social barriers, non-available of suitable jobs are the participation barriers.

Friendly institute environment, special financial support, increase social awareness program, help for future jobs are the main factors to increase disable learner's participation in Bangladesh TVET.

Chapter-1

Introduction to Research

Prelude:

This chapter comprises introduction of the study like-Bangladesh an over view, disability in Bangladesh, policy frame work, statement of the problems, objectives, rational and significance of the study.

1.1 Bangladesh – An Overview

Bangladesh is one of the most densely populated countries in the world. In 2018 Bangladesh has a population of 161 million (World Bank 2020). Bangladesh economy has been able to maintain sustained economic growth. The economy grew at a rate of 8.2 percent in FY 2018-19, satisfactorily up from 7.9 percent in FY 2017-18 (Wikepedia2020). Per capita income was US$1905.7, poverty rate was 24.3 percent in 2016 (UNDP 2020). Despite notable progress in poverty reduction, in 2018 over 21.8 percent of Bangladeshi households still live below the national poverty line (ADB-2020).

The seventh five-year plan (2016-2020) high lights the importance of education and to promote inclusive development, special attention is given to the disadvantaged groups, including persons with disabilities. It emphasized greater importance in imparting TVET and brings more secondary school enrolment into the fold of technical and vocational education and training (7th Five Year Plan, FY 2016-FY2020, General Economic Division, Planning Commission, GOB, P-546)

The country has also taken a number of legislative and policy actions towards nationalizing these global commitments. Inclusive Education (IE) is one of those initiatives taken by the educational system in Bangladesh. For children with disabilities this includes increased access to school and to opportunities for skills development and employment. Now disable persons are seen as contributors rather than burdens and their status in the family and the community is improving.

1.2 Disability in Bangladesh

Literature reveals that people with disabilities have always been discrimination and stigmatized across cultures for thousands of years (Livnech,1982). Disabled people are mostly ignored by society, live in isolation, segregation, poverty, charity and even pity. Due to discrimination, they do not go to public places and free to get those rights which non-disabled gets. Disabled are also deprived of education and employment (Masango,2018).

In Bangladesh, due to extreme poverty, social injustice and lack of knowledge and awareness, persons with disabilities face daily stigmatization and denial of their needs and rights. Persons with disabilities are among the most Vulnerable and marginalized groups suffering isolation and rejection from society from constraining cultural traditions and superstitions.

To face the challenge, we have no reliable national data, anecdotal information and numbers of micro studies generally suggest a disability prevalence rate of between 5 to 12 percent. This is close to the WHO estimate, which states that 10 percent of any given population can be consider to have some or other form of disability (Alam,2009). In Bangladesh ten percent of the total population lives with some kind of disability (Singh, 2017).

Ministry of Social Welfare is the lead ministry to coordinate interventions towards addressing the disability issue in Bangladesh. The Department of Social Service has taken up schemes and program with specific agenda of intervention. A National Foundation for the Department of disable person has been established to provide necessary guideline and support to the government and NGOs regulating disability issues. According to Department of Social Service, Ministry of Social Welfare the disability status in Bangladesh has shown below (Table-1.1).

Table 1.1

Disability Status in Bangladesh during 2016-2020

Sex	2016	2017	2018	2019	2020	Avg.
Male	914506	945894	997702	1082583	1342929	1056722.80
Female	580743	606854	635725	683851	839979	669430.40
Third Gender	2360	2395	2436	2489	2620	2460.00
Total	1506609	1555143	1635863	1768923	2185528	1730413.20

Source: Disability Status Report, disability detection survey program, Department of Social Service, Ministry of Social Welfare.

The Ministry of Primary and Mass Education has included inclusive education in Primary Education Plans. Children with disabilities have just started coming to the schools. The attitude is gradually changing among the teachers towards persons with disabilities. A vast majority of them are still out of mainstream school (CAMPLE,2011). Children with disabilities are less likely to start school and if they do, they are unlikely to transition to secondary school.

According to the report of Social Welfare Department the total number of disable persons in Bangladesh were 2185528 and out of the total, physically disabled were 1021921 i.e. 47% in 2020 (Appendix -2) and appendix-3, exhibits the numbers of disable students in different education level. But we have no information about the disable students in technical education.

Persons with disabilities less access to employment opportunities and even if they are able to get employment, they face problems such as reasonable accommodation at work, accessible public transport to get them to work and back and discrimination and ignorance about their potential at work.

According to Disability Inclusion Analysis for Bangladesh by IDS (2020), person with disabilities is less likely to be involved in any economic activity in Bangladesh. The Unemployment rate for

adults with disabilities are higher (1.9 percent) compared to people without disabilities (1.5 percent). A higher rate of youths with disabilities are neither in work nor education (64 percent), compared to youths without disabilities (43 percent). Only 5 percent of people with disabilities who are working are employee in the public sector. Approximately 20 percent work for non-government organization, and the rest are in self-employed (Thompson,2020).

Bangladesh has taken some steps regarding disabilities. Government has enacted the Right and Protection of Persons with Disabilities Act, 2013. There are specific provisions in the act regarding jobs and education for PWDs But, unfortunately implementation of this act has been very slow.

1.3 Framework & Legislation on Disability.

People with disabilities face specific challenges in the pursuit of their right to education resulting in a reduced access to mainstream education, specific provisions guarantee their right to education and encourage countries to adopt an approach that is inclusive to all, including those with disabilities.

International Framework

The right to education has been internationally recognized. A number of international standard-setting instruments protect the fundamental human right to education.

The rules serve as an instrument for policy-making and a basis for technical and economic co-operation (Udoba,2014). A number of international standard-settings instruments protect the fundamental human rights to education.

According to Article 26 of the Universal Declaration of Human Rights (1948),"Everyone has the right to education". The UNESCO Convention against Discrimination in Education (1960), which has been recognized as key pillar in the EFA process, is the first legally binding international instrument which lays down core elements of the right to education. Convention reflects the Constitutional mandate of UNESCO to ensure "full and equal opportunities for all" and aims at guaranteeing the right to education for all, particularly for marginalized and vulnerable groups, including people with disabilities."

Education for All was also emphasized in the Salamanca Declaration in 1994 in the world conference on special needs considering a huge number of people including people with disabilities are out of education, not even basic education.

The adaptation of the United Nation Convention on the Rights of Persons with Disabilities (2006) is highly significant, as people with disabilities.

Article 24 of the Convention State Parties shall ensure an inclusive education system at all levels and lifelong learning. The Convention requires state to employ teachers with the required skills to provide inclusive education and to ensure adequate and effecting training of teachers so that they are able to teach persons from different backgrounds.

The convention also requires "reasonable accommodation" of the individual learners needs which means, amongst others things, that the school environment must be accessible-for

example, through constructing ramp access rather than stairs, providing educational material in accessible formats, facilitating the learning of Braille and sign language and so on (UNISCO,2015).

Disability Framework in Bangladesh

The constitution of Bangladesh proclaims all citizens equal before the law and includes commitments to ensure "equality, human dignity and social justice for all." This has given the government ample opportunities to adopt legislative and policy frameworks for the development of the full potentials of persons with disabilities in the country. The government of Bangladesh prides itself on being an active participation in all efforts to promote human rights and eliminate discrimination. Bangladesh was among the first countries to ratify many international human rights conventions and to follow up with actions to harmonize national legislation and policies.

In accordance with all national and international commitments/obligations, and under the purview of the National constitution, the Bangladesh government developed a national policy on Disability in 1995. This policy embodies the first official recognition by the government of the issue of disability as part of development agenda. This policy was given legislative support when the National Parliament enacted the Disability Welfare Act on April 2001. This law provides the first ever national definition and classification of Disability (Alam,2009).

To implement the National Policy on Disability Welfare Act, the government formulated a National Action Plan on 24 September 2006. The Ministry of Social welfare, the Department of Social Service and the National Foundation for Development of the Disabled Persons are the three government bodies that cater to the needs of persons with disabilities.

Bangladesh ratified the UN CRPD on 30 November, 2007 and its Optional Protocol on 12 May, 2008 which calls for inclusion of people with disabilities in general tertiary education, vocational, adult education and lifelong learning without discrimination and on an equal basis with others.

The previous Disability Welfare Act failed to protect people with disabilities from violence, abuse and discrimination (NGDO/NCDW/BLAST-Dhaka, August, 2015), as well as not helping them from establishing their rights and freedoms. Therefore, the new disability act was developed to improve the lives of millions.

On 3rd October, 2013, Bangladesh National Parliament enacted the Rights and Protection of Persons with Disabilities Act 2013. According to this Act, Bangladesh has recognized 12 (twelve) categories of disability. These are:

1) Autism; 2) Physical; 3) Psychosocial; 4) Visual; 5) Speech;

6) Intellectual;7) Hearing; 8) Deaf-blindness; 9) Cerebral Palsy;

10) Downs Syndrome; 11) Multiple; 12) Others.

This law also mandates the issuing of national identity cards, enrollment in regular schools, reservation of seats on all forms of public transportation, accessibility provisions in all public places (including retrofitting), equal opportunities in employment and protection of inherited property rights.

The Provision is there for mainstreaming disability in all government training programs, ensuring reasonable accommodation, and developing inclusive training curricula. In our context, problems arise in the countries' lack of capacity, political will or prioritization of resources, which prevent implementation of these laws and policies.

1.4 National Policy of TVET for PWDs learners

Policy to encourage PWDs participation in TVET is only a recent phenomenon. All-through PWDs were never barred from applying for TVET admission, there was no clear instruction regarding PWDs enrolment.

The National Education Policy 2010 highlighted 25 strategies for TVET development. In strategy number 10, it has been mentioned that, special attention will be given to the participation of children with disabilities in the skills development programs would be increased through special initiatives.

The National skill Development Policy-2011 recognizes that access of persons with disabilities in the skills development programs would be increased through special initiative.

The Rights and Protection Act 2013 of Persons with Disabilities in Bangladesh, which call for action to take step to preserve quota for persons with disabilities in admission, provide stipend to students with disabilities, ensure reasonable accommodate on to promote inclusive education and training, ensure accessibility at TVET institutions to increase enrollment of students with disabilities, train teachers, staff, managers and employees on disability issues.

To work with the strategic directions in National Strategy, Directorate of Technical Education (DTE) has taken a number of steps towards disability inclusion. These are implementation of quota in the DTE's technical institutions, linkages of DTE's technical institutions with DPOs, setting up disability inclusion advisory group, fund allocation on disability inclusion in DTE's annual budget, pilot initiative etc. for making DTE's technical institutions disable friendly.

DTE has arrange a consultation workshop (28 November, 2015 at DTE) and meetings involving concerned ministries, departments, govt. counter-part like NSDC Secretariat, BTEB, BMET and relevant NGO's and DPO's for a detailed discussion on ILO recommendations for steps towards disability inclusion in DTE's technical institutions. DTE has also developed some action items for DTE and for the TVET institutions to increase SWDs participations in TVET.

1.5 Statement of the problem

Among marginalized group, children with disabilities remain the most excluded, discriminated not only because of their disability but also because of lack of understanding and knowledge about it's causes, implications and stigma.

Everyone faces hardship and difficulties to participation, but for people with disabilities, barriers can be more frequent and have greater impact. These people need help to access demand-driven education and training, there by opening up pathways to decent employment.

The government expressed its commitment to improving the TVET system through the implementation of the National Policy -2010 and the National Skills Development Policy- 2011. The objectives of our National Strategy for inclusion of persons with disabilities are increasing participation, strengthen understanding, ensuring access, and promotion employment, learning and adopting, and changing institutions.

Directorate of technical education (DTE) has taken a number of steps towards disability inclusion in TVET institutions. DTE through the Ministry of Education (MOE) establish 5% target of enrollment of persons with disabilities as a quota in all govt. and non-government TVET institutions. But till today disable learner's enrollment in TVET is very low.

Bangladesh Technical Education Board (BTEB) regulates admission, curricula, certification and registration of TVET courses in Bangladesh. The enrollment information of Diploma-in-Engineering courses shown below in table (Table-1.2).

Table 1.2

Enrollment Information of Diploma in Engineering Courses in public Sector Institute during 2016-2017 to 2020-2021

Year	No. of Application	Seat Capacity in Public Inst.	Seat Capacity in 5% quota for Disable learners	Total Enrollment	Disable Enrollment Public Institute in Quota
1	2	3	4	5	6
2016-2017	---	59100	2955	49808	-----
2017-2018	159334	49300	2465	42620	-----
2018-2019	161000	49300	2465	43481	39
2019-2020	145891	49600	2480	44012	30
2020-2021	158784	49750	2487	46968	37

Source : Bangladesh Technical Education Board.

Generally, there is little discussion on the wellbeing of persons with disabilities (PWDs) in our society which usually ignores them. But, there are, numerous example that show that if they get the right opportunity they can contribute to society like other person.

1.6 Objectives of the study:

The General Objective of the study is to find out the PWDs participation barrier in Bangladesh TVET in general and Diploma-in Engineering courses of Dhaka Polytechnic Institute in particular. The specific objectives of the study are given bellow:

1) To analyses the scope and participation nature of PWDs in the selected TVET institute during the study.

2) To examine disable learner's participation in Polytechnic Institute according to the TVET policy.

3) To find out the barriers of disable learner's participation in Diploma-in-Engineering courses in Dhaka Polytechnic Institute.

4) To make some suggestions for development of the same.

1.7 Research Question:

The main research questions for this study are:

a. What is the present situation of disable learners' participation in TVET Institute?
b. How do institute implement disable learner's participation in TVET courses?
c. What are the barriers and challenge faced by PWDs to participate in Bangladesh TVET?
d. How to increase the participation of PWDs in Bangladesh TVET?

1.8 Rational and Significance of the study

Once it was belief that disability is a curse and a punishment for sinful behavior permeates all level of society and affects access to adequate care, health services, education and participation. Now a days, we find a change, while its progress is slow. Changes have been noted due to policy modifications and social mobilization (UNICEF-Ministry of Social Welfare, GOB, 2014).

It is increasingly apparent that persons with disability not only have a valuable contribution to make to the national economy, but their employments also reduced the cost of disability benefits and reduce poverty (ILO,2001). Barringa (2011) wrongs about failure to ensure that this children with disabilities receive quality education also translates into higher social and financial cost for society. But unawareness, discrimination, insufficient allocation,

infrastructural and informational inaccessibility, persons with disabilities are less likely to access skills and employment.

If it is possible to increase access of persons with disabilities in skills development programs, they will be as assets of the country. Tomblin, Mary J & Haring, Kathryr A. (1999) observed that, special education and vocational training can play a critical role in the transition of the individuals with disabilities from school to adult life. So, students with disabilities, can also in inclusive vocational classes for making a successful transition from high school to work for students with disabilities.

We therefore, commit to making the necessary changes in education policies and focusing our efforts on the most disadvantaged, especially those with disabilities, to ensure that no one is left behind as noted in the Sustainable Development Goals (UN 2015a).

Disable student's enrollment information in TVET sector (Table-1.2) show our performance. We found a good number of research work has been done on disability around the world. But limited works has been done on disability in Bangladesh, especially in TVET sector. In such a context this study like participation barrier of DAPs in TVET: A Case study in Dhaka polytechnic institute of Bangladesh may be important for the policy maker level as well as the stake holders, who are working in this area.

1.9 Definition of key terms.

1.9.1 Disability

Disability is an impairment that may be cognitive, developmental, intellectual, mental, physical, and sensory or some combination of theses. It substantially affects a person's life activities and may be present from birth or occur during a person's life time.

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) recognizes disability as an," Persons with disabilities include those who have long term physical, mental, intellectual and sensory impairments which interaction with various barriers may hinder their full and effective participation in society on an equal basis with others" (UN,2008. Article,1).

Srinivas and Ashoke (2016), describes,

Disability= Impairments * Barriers.

1.9.2 Impairment

Impairment is a partial or complete loss of functions of a body part, an organ, a sensory function, and/or brain functions. This loss can be temporary or permanent.

Impairment can influence interaction, communication, movement and/or learning process and general behavior in children (and adults), based on (WHO, 1980).

1.9.3 Barriers to participation

Barriers of a disable student education may be behavioral, social or institutional. Ensure lower level of barriers is important to protect their rights. World Health Organization (WHO) describes barriers as, "Factors in a person's environment that, through their absence or presence, limit functioning and create disability. These include aspects such as:

* a physical environment that is not accessible,

* Lack of relevant assistive technology (assistive, adaptive and rehabilitative devices),

* Negative attitudes of people towards disability,

* Service systems and policies that are either nonexistent or that hinder the involvement of all people with a health condition in all areas of life.

1.9.4 Special Education-Inclusive Education.

Special education: Children with special educational needs are children with a variety of different disability such as health and mental health conditions that require special intervention, services, or support. Education for persons with Special Educational Needs (EPSEN) Act defined this as: "A restriction in the capacity of the person to participate in and benefit from education on account of an enduring physical, sensory, mental health or learning disability, or any other condition which results in a person learning differently from a person without condition" (NCSE,2014).

Inclusive Education: The education system which addresses the needs of all children including CWDs in mainstream school is termed as Inclusive Education System. In an inclusive education system, all students participate in ordinary class in their district schools. Inclusive education furthermore requires that students are provided with support services and an education based on their individual needs (Barringa,2011).

UNESCO (2009) elaborates on what an inclusive education system should be in the following statement:

"An inclusive education system can only be created if ordinary schools become more inclusive – in other words, if they become better at educating all children in their communities. The Conference proclaimed that regular schools with [an] inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all, moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system".

1.9.5 Technical and Vocational Education and Tanning (TVET)

According to the definition by UNESCO and the International Labour Organization (ILO), TVET refers to "aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life" (UNESCO and ILO, 2001).

TVET also refers to deliberate intervention to bring about learning which would make people more productive (for simply adequately productive) in designated areas of economic activity (e. g. economic sectors, occupations, specific work tasks).

1.10 Out-line of the study.

This study comprises of five chapters. Chapter one, introduction to research comprises Bangladesh an overview, disability in Bangladesh, National policy, objectives need for the study. Chapter two comprises review of literature, chapter three, methodological aspects of the study, chapter four, data analysis and results and chapter five, discussion of results, implications and conclusions of the study.

Chapter 2

Literature Review

Prelude:

This chapter highlights the review of related research studies and research gap.

2.1: Review of Related Literature

2.1.1 Studies taken by Global Community regarding Barriers to Education for Children with Disabilities.

PWDs face a severe discrimination and exclusion from education system which affects them in different ways. They can be physical, technological, systemic, financial, or attitudinal, or they can arise from an education provider's failure to make available a needed accommodation in a timely manner. Children with disabilities continue to be the group most excluded from the education system (Singal,2016).

Access to school for children with disabilities is often limited by a lack of understanding about their needs, lack of teacher training, un-conducive school environment, classroom support and learning resources and facilities.

A number of initiatives have been taken by global community to recognized education as a fundamental Human Right of every person. United Nations Universal Declaration of Human Rights (1948), United Nations Convention on the Rights of the Child (UNCRC,1989) and United Nations Convention on Rights of Person with Disabilities (UNCRPD,2006) recognize education as a basic human right of everyone including PWDs.

According to UNISCO (2009), lack of relevant policy support, discriminatory attitude towards CWDs and neglect of their right to education are the major challenges confronting their right to access schools. Sanchez, Rodriguez & Martinez (2019) shows many barriers and obstacles in the education centers such as, a lack of teachers training with the needs of diversity of the students is a problem's, physical barriers, underuse of existing resources, as well as educational response lacking in organizational and didactic strategies.

Ontario (2013) have identified five barriers to accessibility of PWDs. These are, attitudinal, organizational or systemic, architectural or physical, information or communications, and technology.

For PWDs participation multiple barriers may occurs at a time. CDC (2019) considered seven most commons barriers to participation experienced by people with Disabilities. These are Attitudinal, Communication, Physical, Policy, Programmatic, Social, Transportation.

Titus (2014) observed the main barriers of PWDs in TVET institution in Kenya are discrimination and isolation, not access-able school buildings and enrolling TVET due to policies of cut-off point marks, or entry behavior to courses they desire to enroll.

Barriga (2011) conclude in Nepal, despite national policies on inclusive and "child friendly" schools, the government is facing to make the school environment accessible for children with disabilities, which in many cases effectively denies these children their right to education.

Udoba (2014) in Tanzania revealed that teacher's challenges are quite universal for teaching learners with developmental disability. Teachers in this study expressed the need for relayed class size, modern teaching materials, motivations to teachers, and additional support services from the government. Study observed that they are not qualified to teach the children with developmental disability.

Mattingly and McInerney concludes barriers to educating children with disabilities may be physical, social or financial. Barriers may be: Policy and system factors, Social and community factors, School factors. Gilson & Dymond (2012) observed that western literature has cited four categories of barriers to successful postsecondary education for students with disabilities. These include student, faculty, institutional and social service relate barriers.

2.1.2 Study Related to Barriers of Education for Children with Disabilities in Bangladesh.

To ensure that all children enjoy their basic human rights without discrimination, disability inclusion should be maintained in all policies and plans. This applies to education systems, which need to promote inclusion by ensuring the presence, participation and achievement of all children, including children with disabilities.

Practically, children with disabilities are less likely to start school and if they do, they are unlikely to transition to secondary school. Practically, children with disabilities may be,

1) Children who are not enrolled in school but who could participate if schools had the capacity in terms of knowledge, skills and equipment to respond to their specific needs.

2) Children with disabilities enrolled in school but excluded from learning because the curriculum has not been adopted to their needs or teachers do not have the capacity or time to make the necessary adaptations, and/or they do not have access to assistive devices necessary for their learning needs.

3) Children with severe disabilities who require additional specialized support, whether in school or not.

Inclusive education is being promoted in both developed and developing countries, but there are a number of barriers confronting full participation of all children particularly CWDs. According to UNESCO (2009), lack of relevant policy support, discriminatory attitude towards CWDs and neglect of their right to education are the major challenges confronting their right to access schools.

CAMPLE (2011) observed a large percentage of persons with disabilities are still out of education in Bangladesh. The common cases of it are poverty, inaccessible infrastructure, negative attitude of family, community and school, absence of access to transportation, distance

of schools, absence of implication of policy restrict the children with disabilities from enrollment in education.

Study of Fernando, Yesmin, Minto and Khan (2010) conclude that inaccessible school infrastructure; limited learning materials, limited capacity of teachers, poverty, disability, conflict and a lack of supporting policy frameworks are the major causes of exclusion of CWDs from the mainstream education system. Malaketal (2013) revealed that teacher's attitude and limited professional development are major barriers to implementing Inclusive Education at school level in Bangladesh.

Loba & Nowshin (2014) recommended to making the school welcoming disability friendly building, classrooms, appropriate toilet, suitable education and co-curricular materials and trained teachers are needed. And for that more resource allocation and policy level change is important.

Olk (2019) observed Bangladesh are often illiterate and do not have access to information about the right of their child. So, to improve the access of disable learners, develop to the community awareness, reduce stigma, more support for basic training of teachers is the most important.

Mehtab (2014) attempted to investigate the real scenario of inclusive education in Bangladesh. This study observed that, because of many seminars, conferences and training sessions are being arranged to increase the familiarity of inclusive education among our teachers and many institutions are changing their system to inclusive system. Normal learners of the inclusive schools tend to accept the special learners as friends.

For special learners study recommended, training for the parents of the special children, having a good job in future and become self-dependent, there need vocational training centers for them.

Alam (2009) observed that access to education of children with disabilities is extremely limited. An un-equal system, a rigid and unfriendly school curriculum, ignorance and lack of awareness of parents, compounded with the inadequate knowledge of teachers and the unfriendly school environment are obstacles to promoting the education of children with disabilities in Bangladesh. Study found that under the government system of Bangladesh, the education of persons with disabilities is under the Ministry of social welfare not under the Ministry of Education. This has created a big barrier to persons with disabilities to be included into mainstream education. .

2.1.3 Study Regarding Disable Learners Participation in Bangladesh TVET.

Special education and vocational training can play a critical role in the transition of the individuals with disabilities from school to adult life. So, students with disabilities placed in general education classrooms, can also include in vocational classes for making a successful transition from high school to work for students with disabilities. Many students with disabilities achieve great success in career and technical education (CTE) programs with minimal accommodations (Hill, P.L., Skidmore, J.L.& Phares, J.B. 2013).

This role can, include preparation of an academic skill needed for specific occupations, instructions in social skills necessary for survival in the community and on the job, and support of the individual in general education and vocational education courses that provide specific skills training and paid employment experiences.

According to present technical education system in Bangladesh the minimum entry level qualification of class eight is required to enroll in the Vocational Courses and SSC or equivalent for Diploma-in-Engineering Courses. This entry barrier tends to discriminate against the disadvantaged groups who fail to complete their basic general education (An overview of Bangladesh's Technical and Vocational Training Sector, DTE and MoE, May, 2014, page-34)

Handicap International in collaboration with the International Labor Organization (2012) conducted an investigation entitled, "Enhancing the Scope of Disability Inclusion in 8 Technical and Vocational Training Centers" to assess the accessibility for persons with disabilities at 8 Technical and Vocational Training Centers in Bangladesh. The assessment found serious barriers in physical accessibility in all centers. While Centers have a similar level of poor physical accessibility for persons with disabilities. As a barrier of physical accessibility this study has identified the areas like washrooms, access to water points, the stairs of the centers and in one case, the main gate are important. Especially poor is the situation of washrooms.

Samsuzzaman (2018) recognized, low education status among parents, insecurity on the way to and at institute, poverty and low-income level of parents, long distance to institutes, lack of skills to some teachers, culture and attitude of the community and unequal treatment among abled person and those with disability are the main factors contributing to low enrollment and retention of learners with disabilities in Bangladesh TVET.

2.2. Research Gap: It is assumed that ten percent of the total population lives with some kind of disabilities. The constitution of Bangladesh proclaims all citizens equal before the law and includes commitments to ensure "equality, human dignity and social justice" for all. Bangladesh was among the first countries to ratify international human rights conventions relates to disability education. Education is one of the most effect ways to break the cycle of discrimination and poverty that children with disabilities often face. We found a good number of researcher works has been done around the work considering the issues like disable education, rights, their successful transition from school to work etc. But limited works has been done on disability in Bangladesh. Practically no specific research works has been done yet in TVET institute considering the area like to identify the different aspects of enrollment scope, institute activity to cope with TVET policy and the barriers faces by the disable learners a most effective ways to mainstreaming them through TVET. Therefore, this study may help future policy maker as well as TVET stake holders for the betterment of the disable learners in Bangladesh.

Chapter 3

Methodology

Prelude:

This chapter exhibits the different aspects of methodology like sample of the study, nature and sources of data collection techniques & tools and data processing & analysis.

3.1 Introduction:

Research methodology simply refers to the practical, how a research systematically designed a study ensure valid and reliable results that address the research aims and objectives.

3.2 Research Design and Variables

3.2.1 Research Design

Research design is the framework of research, methods and techniques chosen by a researcher. According to the objectives, this study has incorporated secondary and primary data as well as quantitative and qualitative data with a view to identifying and analyzing the different aspects of disable student's participation in Bangladesh TVET.

Case study method enables a researcher to closely examine the data within a specific context (Zainal, 2007). Yin (1984:23) defines the case study research method "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used." McDonough and McDonough (1997) suggest that descriptive case studies may be in a narrative form. A descriptive case study is that the researcher must begin with a descriptive theory to support the description of the phenomenon or story.

Mixed methods approach can provide the methodology of research that advances the systematic integration, or "mixing", of quantitative and qualitative data within a single investigation or sustained program of inquiry (Wisdom, 2013). Mixed method gives a voice to study participants and ensure that findings are grounded in participants' experiences.

   "A mixed methods case study design is a type of mixed methods study in which the quantitative and qualitative data collection, results and integration are used to provide in-depth evidence for a case (s) or develop case for comparative analysis". (Crewell & Plano Clark,2018, p.116). This study has adopted mixed methods case study design for the study. In this work participants selected a pseudonym to protect their anonymity.

3.2.2 Research Variables

In this study, the independent variables were the cultural, economic, and institute-related barring factors because they were already constants and therefore, not manipulative. This study investigated how this independent variable barring TVET participation of disable learners, which were the dependent variables.

3.3 Population and Sample size determination.

3.3.1 Population

This study has selected Dhaka polytechnic institute for the purpose of this case study. Sample is a process of selecting a small group people as representative from a large group called the population (Nicnolas,2006).

3.3.2 Sample Size

In practice sample size depends on availability of time, cost involved, degree of accuracy desired and size of the population. In most cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Gay (1976) suggested that, for descriptive studies, ten percent (10%) of the accessible population was enough. In this view to make the sample representative of the total population out of 153, a total of 26 respondents which constituted seventeen percent (17%) were sampled (see Table-3.1).

Table-3.1

Sample size for each category of Respondents

Category	Total	Sample	Percentages (%)
Disable Learners (no girls students)	06	06	100
Institute Management (Principal, Vice-Prin., Chief-Instructor & HoD)	13	05	38.46
Teachers {Instructor, Workshop Super, Junior Instructor/Teacher (step)}	134	15	11.19
Total	153	26	17

Source: Office Record of DPI

Beside these, ten policy level personal and three parents of disable learners were consulted to have their views to gain a deep understanding of the issue.

3.3.3 Sampling process

In this study, purposive sampling was used, and the informants were selected for a good reason tied to the purpose of the topic. Thus, according to Patton (1990), purposeful sampling refers to a procedure in qualitative study whereby informants are selected because of some characteristic. In this regard, only relevant personnel were key informants, out of all.

3.4 Data Collection Techniques and Tools:

Data are the raw materials of research that need to use the most effective and appropriate data collection methods. In collection of data semi-structured interview schedule/check list of observation was developed as the main method. Informal observation and informal talks with the parents were as supplementary methods.

Four set of interview schedules have used for disabled students, class teachers, institute management and the high-level leaders/ policy making level (govt. & non-govt. stake holders). Questionnaire was prepared incorporating objectives and inadequacy of secondary data. In some cases, observation was used as a support method to the interviews with the aim of gaining clarity or understanding the problems in detail. During interviews, the researcher noted vocal intonation and emphasis in addition to the words uttered.

Researcher has collected both the secondary and primary data. Secondary data have been collected by consulting office records of the institutions, statistical bulletins and statistical yearbooks, published and un-published materials, journal, plans and other monographs etc. other relevant documents also have been consulted from all possible sources. Primary data have been collected with the help of relevant interview schedule, face to face talking, case story analysis and observation.

3.4.1 Semi-structured interview

Interview is a verbal conversation between two people with the objectives of collecting relevant information for the purpose of research (Bailey, Hennink and Hutter, 2011). It allows respondents to speak out their opinions, feeling, beliefs, insight, attitudes and experiences about a problem through the use of probing questions.

Data were collected through semi-structed interviews with the respondents. Interview protocols were developed to incorporate questions about barriers discussed in both national and international literature. The protocols were revised accordingly.

Questions about barriers to physical, attitudinal, and systemic access to institute life were posed to students' participants. Instructors and management staff were questioned about the adequacy of institute resources designated to assist students with disabilities.

The interviewer conducted face-to-face interviews per students in order to developed rapport and deepen understanding.

3.4.2 Observation

With Observation, the observer looks at people in their natural settings (Holloway,1997). Observation also provides important additional source data for verifying, clarifying and expanding the information obtained by other methods such as interviews (Baily, Hennink and Hutter, 2011).

Unlike quantitative analysis which observes patterns in data at the macro level on the basis of frequency of phenomena being observed, case studies observe the data at the micro level (Zainal, 2007).

This study used a none participant observation-approach. Observation was carried out in classrooms with observation checklist (Appendices-1 [E]). Again this study used non-participation observation approach during brake time and the focus was to see the interaction between students with disabilities and ordinary students during class or break.

3.4.3 Informal Talks with Parents

Informal talks were also done with some parents who had children with disability. There were not any interview guided questions made for the parents, only general questions were asked such as history of a child, challenges faced by parents and any information they wanted to share.

3.5 Pilot Study

A pilot study was planned and it was conducted before starting the collection of data. Researchers must practice the tools for data collections that they will use in carrying out their studies before conducting the actual research to help them be acquainted with this tool before conducting the research also themselves as researchers (Drew, Hardman and Hosp, 2008)

Pilot study was done by interviewing disable students, class teachers, institute management and policy makers. The interview guide questions (Appendices No-1) were in English. Further correction was made to the interview guide questions after the pilot study. Lastly the English interview guide questions were translated to Bangla due to the fact that the means of communication.

3.6 Data Processing and Analysis

This study is concerned with the problem of disable student's participation in TVET. The approached adopted has basically analytical and interpretative in nature.

Before deciding the methods of analysis for the present study, literature on research methodology and research studies related problem of disable participation in TVET has consulted. Considering the objectives of the study and review of literature this has adopted the following methods of analysis and investigation of the empirical data related to disable participation in TVET.

Data were analyzed using the qualitative thematic analysis (Braun & Clarke, 2006). The data analysis was conducted to critically analyses and report any dominant patterns (themes) in insights provided by the participants.

This study has also used multiple choice-based questionnaires in some cases of interview schedule. Study has used Thus one and Likert scaling methods to measure respondents' opinion. Attitude Survey Questionnaire (ASQ) was used for the collection of data on the present study. Thus, the scoring technique of ASQ were, (a) "Very important" =3, "Important" =2 and "Not-important" =1, for example of this scale, in-case of 15 teacher respondents the possible score against any variable will be 15 (15X1) to 45 (15X3) and the mean score will be the total score divided by the respondent number of that variable, and (b) scoring technique of Likert scale was "Strongly agree" =5, "Agree" =4, "Undecided" =3, "Disagree" =2, and "Strongly disagree" =1. In that scale to measure satisfaction level about any variable, score 3 indicate the neutral value and higher the neutral score indicates the satisfaction level and lower the neutral score indicates the dissatisfaction level of a respondent about any variable.

Thus a total score on or above mid-point represents positive attitude and a score falling below this point represents negative attitude of the respondents. The sum-up weighted score for each variable indicates their priority. In calculation the mean value of each variable, weighted scores of the variable have divided by the number of respondents.

Present study has used specific mathematical and statistical techniques. Major part of variables for this study was measures at nominal or ordinal scales. So, sophisticated techniques of analysis could not be applied in all cases. The analytical techniques used are descriptive statistics, Average, Rank Correlation (Inferential statistics), etc.

3.7 Ensuring Validity and reliability of Data

This study made an account on all issues related to validity and reliability. During the preparation of the interview guide, which was used in the study, the questions were discussed with the stakeholders. A pilot study was carried out to see if the questions were reasonable, useful and easily comprehended to the interviewees and the use of Bangla language in collecting because this is the language well understood by the informants. The translation from English to Bangla was checked by a language professional. The fact that the researcher was acquainted with the field and culture where the research was conducted also added to the validity and reliability.

3.8 Ethical consideration

Ethical consideration is a part of the research works, and cannot be avoided (Bryman, 2004)

Informants were ensured their protection from harm, exposure and anonymity. Ethical guidelines and legal rules should be considered by the researcher (Holloway, 1997)

According to Bailey, Hennik and Hutter (2011), ethical issues have the following considerations:

1. Informed consent. Individual should be provided with sufficient information about the research, in a format that is comprehensible to them, and make a voluntary decision to participate in a research study.
2. Self-determination. Individuals have the right to determine their own participation in research, including the right to refuse participation and also pull out at any time.
3. Minimization of harm. Researchers should do not do any harm to participants or put them at risk.
4. Confidentiality. Researchers should ensure that all data should be kept confidential at all times.

From considerations above, the study was obtained a research permit from the Director General, Directorate of Technical Education. The researcher sought further authority from principal of Dhaka Polytechnic Institute. Researcher then visited the sample institute for this study. The respondents were informed on the intentions of the study and assured of confidentiality.

Chapter 4

Data Analysis and Results

Prelude:
This chapter comprises three sections like disable learner's participation nature, barriers and suggestion according to respondents in section one, disable learners case story in section two and cross discussion of results in section three.

Section--One

Section one exhibits the disable learner's participation scope and nature, institute, institutional facility and barriers according to the responds.

4.1: Introduction

Inclusive education is the practice of teaching disable students alongside there none-disable peers in regular classroom settings, instate of segregation has recommended all over the world. Opportunities for PWDs can be increase by their access and participation in skills development programs. Bangladesh, in the light of National Education Policy, National Skill Policy and the Rights and Protection Act -2013, Directorate of Technical Education has taken a number of steps towards disability inclusion in TVET. DTE circulate an Office Order through the Ministry of Education (MOE) to establish 5% enrollment for PWDs quota in all government and non-government TVET institute.

4.1.1: Dhaka polytechnic Institute at a Glance
Dhaka polytechnic Institute (DPI) is the first and largest Polytechnic Institute for Technical Education in Bangladesh. This institute was established in 1955 with 120 students in four technologies. At present the Institute conducting 4 years Diploma-in-Engineering courses in twelve technologies with enrollment capacity of 2700 per year. In addition to Diploma-in-Engineering courses, the institute also conducting BTEB affiliated NSS-Basic course of 360 hours.
The total land area of DPI campus is 26.084 ackers. It has a four storied Academic com administrative building of 95543.93 sft., three large workshop buildings of 88369.45 sft, 03 boys and 02 girl's hostels of 202966.72 sft and some other facilities like residential accommodation (Teachers and staff), mosque, playground, a gymnasium etc. are there. In addition to that construction of a new building of 168000 square feet (12 floors) is proposed for approval.

4.1.2 Seat Capacity and Enrollment Information of PWDs in DPI.
Dhaka polytechnic Institute is the leading Institute in Bangladesh TVET sector. At present the total nos. of students are 8411, out of them male 7500 and Female 971. Disable students has the opportunity to enroll in TVET courses in merit or in disable quota. But beside the policy the real picture of disable student's enrollment in Diploma-in-Engineering is very low. The seat capacity, enrollment information and disable student's enrollment picture of DPI is given bellow.

Table – 4.1.1

Enrollment Information of Dhaka Polytechnic Institute during 2016-2017 to 2020-2021

Year	Seat capacity	Nos. of tech.	Enrollment	Opp. In D. quota	Disable Stu. (merit + quota)
2016-2017	2500	11	2500	125	5
2017-2018	2500	11	2500	125	0
2018-2019	2500	11	2500	125	1
2019-2020	2500	11	2500	125	0
2020-2021	2700	12	2700	135	--

Source: Office Record of D.P.I
Seat capacity, disable learner's enrollment scope and enrollment information in Table 4.1.1 show that DPI has failed to enrolled disable learners in TVET courses.

4.1.3 Enrollment System in Diploma-in-Engineering Courses in Bangladesh TVET.
Present admission system is centrally controlled and on-line based. After receiving application from the candidates having qualifying marks in S.S.C. or equivalent examination, BTEB prepare the list of the selected candidates, confirm their admission and registration. As mention earlier in section 4.1.2 that disable students have the opportunity to enroll in merit or in quota.
Management of Dhaka polytechnic Institute informs that the institute authority has no scope to select or to consider ability and attitude of a disable learner for admission. Rigid enrollment policy with cut-off marks is also limiting disable learner's enrollment scope in TVET courses. This is in line with an earlier finding by Murgor (2014) that due to policies that provide cut-off point marks or entry behavior to courses they desire to enroll in are also barred from enrolling in TVET.

4.1.4 Barriers Impacting Students with Disabilities in DPI.
Western literature reveals that, despite the support from legislation, campuses remain inaccessible, physically, programmatically, and attitudinally to many students with disabilities. At institute level, barriers of disable learners may be from students himself, faculty, institutional and social service (Gilson&Dymond,2012). It is also expected to use the institute facilities as a tool to promote the understanding a handicapped people for students, such as providing opportunities to use wheel chairs using the barrier free facilities provided**.**

4.1.4.1 Physical Environment:
Institute must be able to use safely and should not hinder the activities of children, with or without disabilities. Physical structure of the Institute buildings needs to designed to used many people, senior citizens or people with disabilities. According to building code institute building layout, floor planning, stairs and elevator, class room, furniture etc. need to be smooth access and easy to use.
Study observes that the four-stearate academic cum administrative building of DPI has no lift/elevator facility. There are two ramps in front of main building to entrance only in ground

floor level. Institute hostels are also not barrier free for while chair users. See observation checklist, (Appendix-1E)

Disable supportive washroom, water point is yet not constructed. Most of the workshops are in the ground floor but study found no preparation for reasonable accommodation in class room or in workshops for disable learners.

Picture exhibits: Stairs of DPI   Picture exhibits: Washroom of DPI

Picture exhibits: Ramp of DPI   Picture exhibits: Disable friendly washroom

A management personnel comments on physical infrastructure,

> *"Two ramps in front of the main building have constructed to entrance in ground floor level. But the slope of the ramps is not properly maintained. The building of Dhaka Polytechnic institute is old. The stairs of the buildings are sleepy and not easy to use, especially more risk for a church person. Practically, at present institute has no capacity to learn a student with while chair. Due to these limitations disable learners' guardians are not interested to admit their child in this institute."*
>
> (Mr. T. BAKER, Chief Instructor & Head, Civil Technology.)

For welcoming disable learner's, any poster, wall paint or other well coming massage, hand bill or any information sharing for disable student's enrollment opportunity of that Institute is not found in the institute.

4.1.4.2 Faculty Personnel:

Administrators and faculty can play key roles in creating a supportive environment for students with disabilities. Institute should provide training to teachers, assistive devices and teaching-learning materials for effectiveness of learning to students with disabilities.

Teachers of DPI have some idea about disability, but 100% teachers (respondents) have no training about methods of teaching of disable student. Study observed that respondents are positive about disable student's enrollment. But they have no time or attitude to take extra care for them. Regarding challenges of teaching a teacher comments on a student,

> *"This student is always shy, not sociable and spontaneous like other. Due to his hearing problem, it is difficult for me to involve him actives. I don't feel he is comfortable working with other students. I have a large number of students. So, it is not easy to take extra care."*
>
> (Mr. S. JAHAN, Head, Non-Tech Department)

Teachers of Dhaka Polytechnic Institute things that, lack of necessary capacity of the institute, inadequacy of budget, lack of training material and learning equipment at institute level, absence of properly trained teachers and lack of co-operation from top to bottom are the major barriers for disable learner's participation in that institute. A teacher comments on disable education,

> *"Our society is not co-operative for disable student education and employment. Financial assistance program is needed for them. To increase their participation in TVET, authority may arrange special trade courses with trained teachers and resource support."*
>
> (Mr. K. HOSSAIN, Jr, Ins., Civil Technology)

Techers responds opened that, generally disable students are obedient and attentive. They try to receive but due to disability their progress is not satisfactory in all the cases. Teachers attitude regarding some selected factors to disable students learning are shown below:

Table: 4.1.2

Teachers attitude regarding some factors relate to disable students.

N= 15

Factors	T.S.	M.S	Teachers satisfaction level		
			Satisfied Nos.	Un- decided	Dis-satisfied
Class attendance	59	3.93	12	03	--
Skills in theory	55	3.67	09	06	--
Skills in practical	52	3.47	08	05	02
Exam. Results	53	3.53	08	06	01
Behavior	56	3.73	10	05	--
Law abiding practice	59	3.93	13	02	--

Source: Tabulated data based on Appendices No-6.

Note: [T.S.= Total Score, M.S.= Mean Score]

From the table it is clear that according to teachers, students with disability in DPI are obedient, their class attendance is good but they need some extra care and specially in practical classes.

4.1.4.3: Students with disability

In institute level, barrier may be originated from disable student ignorance and attitudes. Disable students need to be self-identify. They should provide documentation of their disabilities to disability support center, request for reasonable accommodation if needed, problem solve if accommodation fail to meet their needs. In new institute environment students may need time to time learn with institute personnel, lacking problem-solving skills of a disable often react passively to budding academic difficulties (Green,1996).

To address the disability issue DPI authority has established a Center and engaged a Focal Person. Focal Person prepare the list of disable students but no welfare activity is there. Information sharing, consultation, maintain communication with present and past students was not observed. According to focal person of the center,

> *"Our disable students have mild level of disability. Their problems are minor. They do not come to the center for help."*
>
> (Mr. S. KABIR, Focal Person, Disability Cell, DPI)

One of the management personnel comments,

> *"Our present disable learners have 'mild' disability problems. We are ready for reasonable accommodation according to disable student's needs. After admission in 1ˢᵗ semester, we arrange an orientation program and discuss the disability issues for building awareness, positive attitude of teachers, staffs and co-learners."*
>
> (Principal DPI, Mr. R. ISLAM)

4.1.4.4 Social Service Agency

Barriers can arise from social service agencies. Provide training and support for assistive technology, motivational counselling and financial assistance programs for people with disabilities is often a slow and complex process. These barriers present difficulties that are not negotiated by students without disabilities (Gilson and Dymond,2012).

Management inform that they are trying to MoU with DPOs. But no organization has come to signing MOU to co-operation of disability inclusion and provide jobs for them.

4.1.5: Implementing Status of some DTE decision for increasing PWDs participation in the Institute.

Regard to disability inclusion in TVET Directorate of Technical Education has taken some initiative. DTE establish Disability Inclusion Advisory Group (DIAG) to guide policy formulation, disability budgeting and implementation of disability inclusion measures in DTEs TVET institutions. A national level workshop on Guiding Disability Inclusion Annual Plan of DTE's TVET institutions was organized on 28 November, 2015 at DTE.

To welcoming PWDs in public sector TVET Institutions, DTE has identified some action items. In response of DTE letter (Memo no. 37.03.0000.010.16.008.15-400, dated- 20/06/2017) Dhaka Polytechnic Institute authority send a Progress Report (dated- 26.09.2017) on disability inclusion action taken by them. Action items assigned some specific tasks upon the Institutions to increase PWDs participation in TVET. The present status of improvement for disability inclusion in DPI is shown below.

Action items and Implementation Status of Disability inclusion in Dhaka Polytechnic Institute.

Action items	Progress Report of DPI (on 26/09/2017)	Achievement Status (During the Study)
** Sign MoU between TVET institutes and Disabled people's Organizations (DPOs) to increase participations. ** Establish linkage/sign MoU with industries and employers to promote employment. ** Allocate 1% capital expenditure in plan/development budget to create `fund for disability inclusion' for strengthening institutional facilities, including accessibility, reasonable accommodation, residential facilities and transport facilities. ** Prepare progress report on implementation of TVET institute's Disability inclusion Action Plan by individual institutes and compile those at DTE level.	** Institute has already constructed two ramps to entrance in the ground floor of academic building. ** In 2017-18 financial year they had the plan to take initiative to make physical structure barrier free, construct a disable supportive wash room and provide learning material and support to disable learners. ** Signing MoU with DPOs are in under process. ** A job fair and industry linkage will be arranging for them.	** Regard to this, study do not find any significant development during the study. Institute management conform the same. ** Institute authority is trying to signing MOU with DPOs, but no one has contracted with them. ** They are trying to establish linkage with industries for disable learner's employment. Institute management is ready to create the facility of reasonable accommodation if a disable student's demand for that. ** A wash room will be construct soon. ** We have the plan to develop all the facilities step by step to be more supportive and create the opportunity to enrolled all types of disable learners in that institute.

From the above discussion it is clear that implementation status of action items in Dhaka Polytechnic Institution is not in satisfaction level.

Focal person of DTE conducting regular meeting with stakeholders, developing policy and regular monitoring of the institute activity, compile institute report, and regular update of data was not performed accordingly.

4.1.6: Faculty (Respondents) Opinion Regarding Participation barrier of PWDs in TVET.

4.1.6.1 Stakeholders Views

Institute management and faculty can play key roles in maintaining supportive environment in any educational institute.

Institute management views

According to the opinion of the institute management respondent regarding participation barriers of disable students include: lack of publicity, not interested about technical education and absence of disable friendly institute environment. Moreover, long course duration of diploma- in-engineering courses and considering technical education not suitable for disable learners.

Teacher's views

Teacher's thinks that the barring factors are; most of the people do not know about TVET and the scope of disable learner's education and jobs. Moreover, financial condition, family attitude for disable child education, social barriers; institute environment, teachers' capability for teaching disable learners and non-available of suitable jobs e.g., are also important.

4.1.6.2 Respondents Identification of Some Barriers for Low Participation.

Table-4.1.3

Identification of some barriers for low participation
 N= 20

Barriers	Teachers			Ins. Mgt.			Total		
	T.S.	M.S	Rank	T.S.	M.S	Rank	T.S.	M.S	Rank
Limitation in physical Envt.	41	2.73	1.5	13	2.6	3.5	54	2.70	1
Not aware about the scope of TVET	39	2.60	3	13	2.6	3.5	52	2.60	4
Low enrollment in primary	35	2.33	7	11	2.2	6.5	46	2.30	7
Low pass rate in exam.	28	1.86	9	9	1.8	9.5	37	1.85	9
Financial insolvency	38	2.53	4	15	3.0	1	53	2.65	2.5
Limitation in external move.	36	2.40	5.5	14	2.8	2	50	2.50	5
Non-admission of disable learner	27	1.80	10	9	1.8	9.5	36	1.80	10
Lack of trained teachers	41	2.73	1.5	12	2.4	5	53	2.65	2.5
Rigid to curriculum &evaluation	33	2.20	8	10	2.0	8	43	2.15	8
Stigma in family	36	2.40	5.5	11	2.2	6.5	47	2.35	6

Source: Tabulated data. Note: [T.S.= Total Score, M.S.= Mean Score]

Table 4.1.3 exhibited that out of ten selected causes, "Limitation in physical environment in the institute" (mean score-2.70), ranked first followed by, "Lack of trained teachers" (mean score-2.65) and "Financial insolvency of family" (mean score-2.65) in the second rank combinedly. Followed by "not aware about the scope of TVET (mean score-2.60) in the fourth rank." Causes like, "Low pass rate in examination" (mean score-1.85), "non-admission of disable learner in institute" (mean score-1.80) etc. are recognized as less important causes as a participation barrier. ranks co-relation result shows a positive co-relation results among the opinion of teachers and management (where df=8, T-table value at 5% level of significant is 0.278 & calculated T-value is 3.306)

4.1.7: Faculty (Respondents) Suggestion for Increasing Participation of PWDs in TVET.

4.1.7.1 Views of Faculty

Institute management and teachers' respondent think that increase awareness about TVET is the most important. Institute administration believes that students with mild physical impairments are more likely to be accepted in Diploma-in-Engineering courses. Diploma-in-Engineering is a long four years duration courses not suitable for all disable learners. Short courses or skills training program, special designed job readiness skills programmed can be taken for them. Such type of project may be taken to capacity building of TVET institute to inclusion different categories of disable learners in different job courses according to this attitude and ability of disable learners. For this arrange such type of institute facility and trained teachers are needed. This type of activity will also increase the scope of disable participation opportunity for Diploma-in-Engineering course of the institute. One of the management personnel recommend,

> *"Increase social awareness, change in mindset and taking cooperative initiative from real view is important to popularize TVET."*
>
> (Mr. P. SHARKER, Vice-Principal, DPI.)

4.1.7.2 Opinion Regarding Some Selected Factors to increase PWDs Participation

Institute management and institute teachers (respondent) have identified the selected factors (Table4.1.4) to increase participation in TVET institute.

Table 4.1.4
Respondents Opinion Regarding Some Selected Factors to Increase PWDs Participation in TVET.   **N=20**

Factors	Teachers			Ins.Mgt.			Total		
	T.S.	M.S	Rank	T.S.	M.S	Rank	T.S.	M.S	Rank
Special financial support	41	2.73	4	15	3.0	1	56	2.80	2.5
Help for future jobs	42	2.80	3	13	2.6	3.5	55	2.75	4
Introduce more suitable tech.	35	2.33	6	12	2.4	5.5	47	2.35	6
Special evaluation system	36	2.40	5	13	2.6	3.5	49	2.45	5
Disable friendly ins. Env.	44	2.93	1.5	14	2.8	2	58	2.90	1
Increase social awareness programs	44	2.93	1.5	12	2.4	5.5	56	2.80	2.5

Source: Tabulated data.
Note: [T.S.= Total Score, M.S.= Mean Score, Ins. Mgt= Institute management]
Table 4.1.4 exhibited that out six selected factors, "Disable friendly institute environment" (mean score-2.90) ranked first followed by, "Special financial support" and "increase social awareness programmed" (mean score-2.80), in the second rank. "Help for future jobs" (mean score-2.75) in the fourth rank respectively. Rank co-relation result shows a positive Co-relation results among the opinion of teachers and management (where df=4, T-table value at 5% level of significant is 0.304 & calculated T-value is 0.4084)

4.1.8: Opinion of Policy Level Respondents

4.1.8.1: Level of Satisfaction Regarding Support to Disable People

Policy support is very important to create an environment for disable enrollment in TVET. Government attitude, budget allocation, development policy and plans all are the key factors to make the TVET as a successful way for better life of PWDs learners. Policy makers were asked to consider the following factors for the disable learners and put tick marks.

Table: 4.1.5
Opinion on some selected factors of policy level (respondents) regarding PWDs

Factors	T.S.	M.S	Satisfaction level		
			Satisfied Nos.	Un-decided	Dis-satisfied
Government Policy	38	3.80	8	1	1
Legal frame work	37	3.70	7	3	--
Attitude of Office personnel	28	2.80	1	7	2
Government budget	31	3.10	4	4	2
Stake holder's activity	32	3.20	4	4	2

Source: Tabulated data (see Appendice-7)
Note: [T.S.= Total Score, M.S.= Mean Score]

Table exhibits that most of the respondents believes that policy and legal frame is good but attitude personnel's and government budget support need to be improved to make more convenient environment for PWDs of Bangladesh.

4.1.8.2: Policy maker's views regarding participation barrier and suggestion

Policy level respondents also believes that, TVET institute environment are not yet disable friendly and technical education is not popular among our people are the main causes for low participation of PWDs in TVET.

Stakeholders (respondents) of policy level personal recommended for more budget allocation by taking disability supportive plans. Moreover, reduce gap of top to unit level activity, increase social motivational activity to increase PWDs participation in TVET skills programmed as well as diploma-in-engineering courses is needed.

One of the respondents of Bangladesh Technical Education Board comments,

> *"We received limited application in Quota. Every year, the scope of disable learners in TVET enrollment is unutilized. Authority may think about the admission policy. Reasonable relaxation of cut-off marks and institute basis direct admission opportunity, may increase disable learner's participation in TVET".*
>
> (Mr. S. ALAM, Deputy Director, Bangladesh Technical Education Board)

DPOs respondents recommended for consultation with potential learners with disabilities and their families to improve their motivation on TVET education. A DPOs respondent comments,

> *"Make partnership with local exits disable people organizations (DPOs) and Self-Help Groups (SHGs) to identify the potential learners with disabilities can play an important role to increase disable learner participation in TVET skills programs. Moreover, job readiness TVET Skills program according to disable learners' ability is important to mainstreaming them through TVET."*
>
> (Mr. ZAHID, Program Officer, Bangladesh Business Disability Network)

Policy personnel in generally suggested that, regular advertisement, hand bills, poster, social communication and website may use to increase the social awareness and motivation to increase enrollment. Financial support, institute environment, teachers training and co-operation from govt. and DPOs can play a positive role to increase disable participation in TVET.

4.1.9: Summary
There is a lot of difficulties creating participation barriers. Beside the TVET policy, the enrollment rate of disable learners found very low. According to investigation it is observed that, there are no institutional policies or practices to encourage the inclusion of persons with disabilities. The admission system is centrally controlled and with rigid cut-off marks. Institute authority has no scope to consider a disable learner's according to his ability and attitude.

The physical facility of the institute is not disable learners supportive. Absence of ramps/elevator, wash room, reasonable accommodation and learning materials has limit the

scope of disable learner's participation in that institute. The assessment found that teachers have limited idea about disability. They have no training to develop an inclusive environment. Teachers are not provided with accessible teaching materials to   assist them.

Activity of DPOs were not found. Study found that the implementation status of the action items decision is not satisfactory at all.

Teachers, management and policy level respondents combinedly opined that, lack of trained teachers, financial insolvency, limitation in physical environment are the major barrier. Moreover, lack of transportations problem, lack of awareness are also limiting the participation in TVET. They recommended for relaxation in enrollment policy, institute base admission facility for disable learners, increase structural facility, take motivation & awareness program, financial assistance and make partnership with local DPOs can play a positive roll to increase participation in TVET courses.

Section--Two

Section two exhibits the details case history of all the disable learners, parent's views and find the main features of the stories.

4.2: Introduction
Case study is important to track a person intensively. Close talk, Observation and sharing the life story, experience and feelings of a person may be strong tools for in-depth analysis of a problem. Considering some selected areas may be helpful to conduct a cases study. Participants selected a pseudonym to protect their anonymity.

4.2.1- Case Analysis of Disable Students in DPI.

Case Study 01: Rakib

Rakib a 20 years old boy is a speech impaired by Birth. He had a very difficult time due to his disability. His family leaves in rented house in Kaliakor, Gagipur. Rakib disclosed that his father did not like his education and he left the family in his school life. Mother works as a maid servant to maintain the family. Due-to financial insolvency, Rakib failed to receive proper treatment and speech therapy in childhood. Support from their relatives is very irregular and limited. His sister studying Bachelor in Social Science in local college. She also earns little by teaching in a kindergarten school and working as a private tutor.

Due to speech problem, he often felt in troubles in his society. His school life is not pleasant. School teachers do not inspire him for education. But his mother always inspired him. He has registered himself and received disability identity card 'Subarna', but do not have any disable scholarship or any govt. Support.

After passing SSC from local high school Rakib admitted in Diploma-in-Engineering courses in Electrical Technology in 2015-2016 academic year. Institute friends sometimes laugh at him, make funs and create some problems. To earn money, he works as a part time waiter or chattering service in Convention Hall

Now he is in attachment of final semester. Due to covid-19 situation final viva examination has stopped. He desperately needed a job to help his family. Rakib says that he come to know about diploma engineering from neighbor brother.

Physical environment of Dhaka Polytechnic Institute is not disable learners friendly. But teachers and head of his department always support him. Sometime class mate laughed at him. Few friends help him in different work.

From industrial attachment and with personal initiative he acquired some skills about motor wending, electrical works like house wearing, power supply etc. But due to his speech problem he has not confidence about interview board of viva-voice. He believed that job support from govt. and employer is the most important for PWDs. After certification prince expect a job. He will be happy if some-one offer him a job salary around tk. 15,000/- per month so that he can help his family. It will be very unpleasant for him to remain unemployed after certification.

Rakib believes that awareness programs is important but ensure suitable job is the most important to increase PWDs participation in TVET. He also added that skill training program need to be job oriented and capacity based of a PWDs.

Case Study 02: Polash

22 years' old Polash study in final semester (attachment) in Diploma-in-Civil Engineering Technology in Dhaka polytechnic Institute. After SSC from Polash High School of Devigonj, Panchagor, he came to Dhaka and admitted himself in TVET Diploma-in-Engineering course.

palash and his parents are long time residence of Dabigonj, Panchagor. Polash is a hardworking boy. His father is an agricultural day laborer. Out of 4 members family Polash is the older. His only sister got married before completing high school level. His left leg is weak and fingers are not normal in shape. He is unable to use any sandal shoe. He is not fit for working a long distance or to move a high raise building without lift. His father advices him not to go play ground in school.

When he was in class eight his father decided to stop his education; but after his good result in JSC examination his teachers requested his father for his education. He also added that from school life he tries to maintain his education expenses by private tuition. In polytechnic life he also works as a part time accounts keeper of his hostel.

From school life to diploma education his best friend is Bikas, another physically challenged student in the same technology. Practically both of them were inspire about technical education, especially civil engineering technology from local computer training center. Polash thinks that society is not supportive as they needed. Sometimes they received negative attitude from them.

Regard to Institutes' disable friendly environment, no physical arrangement like wash room, water point, ramps/elevators, special arrangement in class room or laboratory is prevailing. Disable students enrolled here are mild or moderate in nature. In Polytechnic Institute he always faces the problem to go different Flore level to attend theory and practical classes. He also disclosed the fact that there is no special attention about disable learners. Departmental head and some teachers have some positive attitude and they some-times inspired them but they do not have special attention or time for them. In practical classes, class mates are helpful. But he has to face the problems due to non-capability to go fast with others. The study observed the same.

Through Upazila Health Centre, Polash registered himself as a disable person and able to collect a identity card Subarna' from social welfare department under Ministry of Social Welfare. But he did not receive disable student scholarship.

Polash is a hardworking boy. From school life to till to date he is fighting for established himself. Due to covid-19, Job market situation is not well. But through personal initiative and maintaining regular communication with his departmental teachers and some organizations, he able to manage a work in 'Woods & Bricks Company, Mirpur, Dhaka with a monthly salary of tk. 8000, which will be re-fix after three months training period. BBDN (Bangladesh Business Disability Network) also manage a part time job for him. Polash disclosed that Institute Job Placement Cell has no special attention for the PWDs learners.

Case Study-03 Bikas

20 years old Bikas admitted in civil Diploma-in-Engineering course with his close friend Polash. From school to diploma and also in social life, both of them are a very positive and helpful to each other. Bikas thinks that society leaders are also good and supportive. According to Bikas, his family always inspired him for education. But after his father's death his family felt in a great problem and his mother earn little to meet the family needs. Institute authority help him to free accommodation in hostel. Ananda said that generally teachers are well behaved but one day a teacher insults him due to disability he is not able to understand the lesson. Bikas and polash several times go for help to Focal Person but failed to receive any help or even the information of govt. scholarship for disable students.

Bikas, has some problem in Right hand. He is not able to write in right hand. Like Polash, Bikas reveals that Institute's environmental facility is not disable friendly. Dhaka Polytechnic Institute has no scope to enroll a high categorical disable student. Construction of some facilities like ramp/lift, special washroom and some reasonable accommodation in class rooms/workshops are the most important to enrolled a challenges student in the institute. Initiatives should be taken for that. Bikas also disclose that special attention from institute authority and teachers about disable students and ensuring jobs are also vital factor to increase disability participation in TVET.

Case Study-04: Ratan

Ratan a 21 years old promising boy who admitted Dhaka polytechnic Institute in Electrical Diploma courses. Due to coved-19 their final viva Examination has stopped. He will try for a job after certification but have a frustration about success. His family lives in Lalpur, Natore. Father is a land less farmer. His younger brother is in class four and sister in studying in local college in HSC level.

Ratan is left-handed boy. From his birth his right hand is almost in-active to perform a heavy job. He has 'subarna' identity card but not receiving any scholarship. Practically, he has no idea about disable student's scholarship and institute authority do not informed about that. Inspirited from other people he started to work as a freelancer from school life and now, he is skills in his work. In future he would like to do batter in web design and development. Practically he is maintaining his expenses from earning by free lancing service.

Ratan express that in social life he is always ignored by all. Their society leaders are not supportive and helpful. Sometime school and Institute friend tease him. But Institute teachers are co-operative. He believes that opportunity through TVET is good but difficult to manage a

suitable job. Society is not sympathetic about a disable person like him. He passed his time with his computer. He does not like to travel here and there. Practically he has no friends.

Ratan says that in our society poor children, especially disable children are leaving school due to parents are not ready to bear their educational expenses. Job readiness skills training is the most important for the disable person. He applied to all Govt. and private organization to give the opportunity to disable person without any bank draft or treasury chalan. Job lessness of a disable person is very common and it creates a big burden on their family. Our society is not ready to accept a disable person and employers have a negative attitude and try to avoid them for employment. Job readiness through TVET skills is important for mainstreaming them and it will also increase the PWDs participation in TVET. Ratan also believes that supportive work environment is also important for them.

Case Study-05: Alam

Alam a 21 years young boy of eight semester in Mechanical technology. He is in attachment. Due to covid-19 situation his final viva-voice examination has stopped like others. He came to know about technical education from local senior students and decided to go for enrollment in Diploma-in-Engineering courses. His family lives in Bhoirob, kishoregonj. His family members are six in number. His father is day labor and his younger brother after class seven join to work as a painter to help their family

Alam's right hand is weak. He can write in right hand but speed is very slow. In practical classes, his friends help him to perform different jobs. Due to disability Mechanical Technology is not suitable for him. During the admission period no one advices him about it. Now he is worried about future. In polytechnic Institute Alam faces some problem to use the water point, wash room etc. Practically, physical environment of the Institute is not disable friendly. Alam was able to manage the 'Subarna' card of social welfare department through Upazilla Health Complex and also receiving the benefit of disability scholarship.

Alam think's that DPI environment is not suitable for disable learners and have no special attention for them. For this, limited students are enrolled in TVET courses. He thinks that financial support, social awareness program and ensure suitable jobs may increase the participation of disable learners in TVET.

Case Study-06: Raju

Raju a 17 years old young boy admitted in civil Technology. He lives with his family at Dhaka Polytechnic staff quarter. His father is a teacher in the same technology of DPI. Raju admitted himself in civil technology in ward quota of his father. Raju is a left-handed boy. His right-hand is very weak and not to able to perform any job. His family do not know about the government policy, support for disable students. Practically Raju and his family ware in shame about the problem and due to shyness, they are not interested to talk about it openly. He has some friends who are accompanied him out-side the classes. Raju has no registration from social welfare department. In Exam Hall he needs some extra time to answer all the question but he did not claim it to the authority due to his ignorance about the examination rules. Raju says that different disable person has different problems. So, ability of the disable person must be access before TVET enrollment in different Technology.

4.2.3- Parents views:

Raju's father' believe that family and society considered a disable child as a burden. For ensuring a decent life. Family and society support is very important. Some of the disable people may have some special quality or skill and they will be able to be an asset of the society if they receive proper care and support. Government can help then for employment. Attitudinal change of family and society is important to produce a disable child as an asset not burden on the society.

Polash's father say that he is struggling for his son. Society people some time say dirty words about the disability but he does not care about it. Rakib's mother was shameful to talk and disclose any thing about her family. But she appealed to all to do something about the disable person and also his son. She also added that after TVET education jobless of a disable son is unexpected.

Discussion with them it is clear massage for us, that parents want that the child should become independent in life through vocational courses and tanning so that they will be able to earn their livelihood easily even when they might not be around. This finding establishes the earlier observation of Sharma (2014).

4.2.4   The main facts of the stories:

In Dhaka Polytechnic Institute disable students are mainly physically impaired and their disability level is 'mild'. Most of them are admitted in merit not in disable quota. There socio-economic back ground disclosed that most of them are from poor agricultural family from rural Bangladesh (Appendix no.05). Disable student have to face the problems originated from their own family, society and education to future Jobs. Disable students in DPI are almost highly satisfied with their class teachers, Department Heads and Co-learner's supportive behavior, but in the institute, they have no opportunity to participate any co-curricular activity for them.

From the above stories some common features are disclosed:

1) PWDs face a wide range of discrimination in social life and reduced to access in schools. They have to face the barrier to go for education, jobs and even public transport.
2) Parent's inspiration and support is the major driven factors behind their education and future life.
3) Government has disable learner's enrollment policy in all TVET institute. But, Physical environment of DPI is not disable supportive. Institutional barrier limits the disable student's participation scopes of that institute.
4) Present disable students are mainly mild in disable categories. Institute should take steps to be barrier free for disable learners. At present a wheel chair person has no opportunity to participate in any TVET courses in that institute, whereas the law and the Government policy do not prohibit him to enrollment.

5) It is a big challenge for a poor family to bear the expenses for continuous support to a disable child. In some cases, this is limiting their go for education, health care and even to avail the scope for development in future life. In some case they worked as a part time worker to meet up their expenses.

6) Government and non-Government support programs for disability is not sufficient and most of the cases they do not know about govt. policy and supports for them. They were failed to receive the govt. disable student's scholarship as they are not applied for that. Even all of them have not registered through social welfare department.

7) After certification, uncertainty about suitable job is most frustrating for them and they were worried to remain burden upon their family.

4.2.5 Summary

Disable students and their parents believe that society is not disable friendly and employers also try to avoid their employment. For increasing participation in TVET financial support is important but most important is to provide them with suitable jobs. Social awareness program is impotent to increase application for TVET enrollment. Institute arrangement should be disable friendly and TVET courses need to be job oriented on the basis of the disable learners' ability.

Chapter 5

Discussions of Results, implications and Conclusions

Prelude: This chapter contents the Discussions of Results, implications and Conclusions of the study.

5.1 Introduction

According to the objectives and research questions; study consulted related literature, office documents and taking the views of stakeholders (respondents) like institute management, teachers, disable learners, their parents and policy makers therefore it is necessary to sum-up the views and justify the outcomes for decision making.

5.2 Addressing the Research Questions

This study has sought to investigated the different aspects of disability education in Bangladesh TVET. To investigated the status and barriers of disable learner's participation, according to the objectives study try to find out the answer of the selected research questions on the basis consulting office records, respondents' opinion, case story and observation.

5.2.1 RQ-1: What is the present situation of disable learners' participations in TVET institute?

Study sought to investigate the nature and scope of disable learner's participation in TVET institute. In Bangladesh disable learners have the opportunity to enroll in merit or quota in TVET courses. Beside the policy the enrollment in terms of capacity is very low (Table No. 4.1.1). Institute does not achieve any success to disable learner's enrollment. Same picture is found in BTEB enrollment information (Table No.1.2) of Diploma-in-Engineering courses in Bangladesh. So, it is clear that introduce of quota has created an opportunity for disable learner's enrollment in TVET, but only quota is not effective to increase participation.

Study observes that learners studying in that institute are mainly physically impaired and their disability are in "mild." They do not need to use any assistive device for movement. Institute management and teachers have more favorable attitude towards mild disabilities. This establishment is in line with an earlier finding of Abebe (2015), Kahan, Hashmi & Khanum (2017).

Disable learners enrolled in that institute are mainly from poor rural family. They have enrolled to this education especially in DPI to have a job.

According to the information of Social Welfare Department Report the numbers of disable learners in different education level is increasing (Appendix No.3) enrollment in diploma in engineering courses BTEB observed a mixed picture (Table No.1.2).

5.2.2 RQ-2; How do institute implement disable learner's participation?

Disable learners never barred in enrollment in TVET courses. However, no general guidelines stipulating which types of impairment is compatible with which fields of study. Results show that institute managements believes that students with mild physical impairment are more likely to be accepted in these fields.

Beside the govt. policy and plan to increase institutional facilities for accessibility, reasonable accommodation, residential facilities and transport facilities no significant steps have taken in that institute. To increase disable learner's enrollment authority has no success to signing MOU with DPOs or established linkage with employers. Implementation of action items to increase institute facility for disable learners has no progress. Study observed lack of proper initiative by the authority.

Teachers shown a positive attitude towards disable student's enrollment, contrary to the fact that in case story it was observed that teachers to be unfriendly to them. Murgor (2014) also found that teachers are not friendly according to their need.

Welcoming a disable learner, information sharing, motivation and counselling program is not in effective manner. Information management system is very week. Focal person do not receive any problem from his disable learners to solve. But disable students confirms that authority has no special attention or time to listen their problem. Institute has no success to singing MOU with DPOs and establish linkage with employers for increasing disability inclusion and create job opportunity for them.

Despite the GOVT. policy and quota in admission for disable learners, study found no institutional practice has developed yet to encourage the inclusion of persons with disabilities in that institute.

5.2.3 RQ-3: What are the barriers and challenges faced by PWDs to participate in Bangladesh TVET?

People with disabilities face specific challenges and barriers from their family to education and employment. This study has identified some of the participation barrier in the TVET institute.

Institute's facilities should allow all students, with or without handicaps, to fulfil their education without hindrance. Result found that physical environments of the selected TVET institute is not accessible by person with disabilities particularly by persons with visual and physical impairments. Absence of ramps/elevators in academic and hostel building, disable supportive washroom, learning materials, reasonable accommodation in class room and workshops have largely reduced enrollment scope in that institute.

Moreover, study identified that, teachers are positive about disable student's enrollment. But have no time in his regular classes or attitude to take extra care for them. Study observed that teachers are not trained and motivated, they have no learning materials. The activity of development partners including NGOs, DPOs and civil societies are not observed to co-operate disable learner's inclusion in TVET institute.

Barriers observed in institutional practice and attitude. Welcoming, motivation & counseling, problem solving, information sharing is not there. Study observed lack of management initiative

to developed disable supportive environment in the institute which ultimately creates a barrier for scope of disable learner's enrollment.

Management thinks that all disables are not fit for TVET enrollment. This finding established the earlier that institute administrator believes that students with mild physical impairments were more likely to be accepted in these fields (Malle,2015).

Regardless of the prevailing challenges that curtail the inclusion of student with disabilities in TVET education program in the country, the findings also divulged promising progress in the participation of student with disabilities in technical education program. Disable students are also barred from enrolling due to policies that provide cut-off point marks and rigid entry behavior of TVET courses. The same was observed by Murgur, Changa'ch & Keter (2014) Stake holders thinks that the participation barriers are lack of publicity, not interested about TVET, considering technical education not suitable for PWDs, financial condition of family, long course duration, negative attitude & stigma of family, social barriers, non-available of suitable jobs are the participation barriers.

5.2.4 RQ-4 How to increase the participation of PWDs in Bangladesh TVET?

Results from respondents confirms that friendly institute environment, special financial support, increase social awareness program, help for future jobs are the main factors to increase disable learner's participation in TVET. Disable learners case story also confirm these findings.

To increase application in first semester enrollment, make partnership with local disable people organization, take job ready-ness disable learner's skills program, relaxation in admission policy may be helpful.

Diploma-in-Engineering is a long duration course. Job oriented short courses may be taken to make sure TVET for all. Barrier free institute facility and trained teachers with learning materials are needed.

To increase social awareness and motivation, regular advertisement, hand bills, poster, social commination, website may be used.

Authority should take steps to create a co-operation with civil society, NGOs, DPOs and employers for disable learner's participation and future jobs.

5.3 Implications of the Findings of the Study

Disability is a cross-sectional issue. Based on the literature review, responses from respondents, case story, observations by the researcher during the study following are some of the key recommendations to improve the present situation of participation barriers of disable learners in Bangladesh. Information sharing of success story inspires others to go for TVET.

1) Barrier free institute for disable learners is important for disable learner's participation. It is urgent need to improve step by step the infrastructural facility of the TVET institute It will also increase the scope to enroll disable learners in different short courses of that institute. Authority should take necessary steps to increase the facility to be a barrier free institute for disable learners.

2)In order to improve that poor learning environment for disable learners the following four aspects are recommended.

- Special training facilities;
- Resources;
- Special needs education teachers;
- Further research

3) Role of Disability Focal Person need to be developed. Clear data base is necessary to develop an effective plan. Institute disable center should maintain detail information of the running and past disable students, their family back ground, problem they face in the institute and their future plan. Information about govt. rules and regulations, potential learners, and Disable Persons Organizations are also important. Institute should maintain close & regular communication to DTE. Monitoring activity should be developed for that.

4) It is important to consider disable learner inclusion is a social responsibility, not it is only a Govt. policy. Listen to them, motivation and make friends with them may be a good help for disable TVET learners. Institutes should take proper initiative to develop such culture in that institute.

5) To increase applicants of disable learner's awareness and motivational program for disability inclusion in TVET should be boost up in the line of involving local authority, govt. and non-govt. personal, DPOs, school authority, local elites, and family of the disable child to explain the scope and opportunity of TVET for disable learners. Local TVET institutes should take steps for necessary actions in this regard.

6) To support and motivate for disable learners and their family, creating a fair and effective funding for high needs students. Present support system for disable students is complex, bureaucratic and not need base according to disable learners.

7) TVET may be more flexible according to individual learner demand. Present admission policy, cut-off marks, assessment system may be more flexible to attract disable learners. Assessment system may be comprehensive- skills and job oriented.

8) More co-operation and co-ordination among the stake holders like-Social Welfare Department, Directorate of Technical Education, Bangladesh Technical Education Board, TVET Institutions, Disable Persons Organizations are needed. To develop this, Directorate of Technical Education should take necessary steps.

9)Flexible options is needed to prepare TVET as an effective way to mainstreaming disable people. Office of technical education and TVET institute can designed a carrier technical education (CTE) certificate program, individual work readiness certificate (IWRC) for all categories disable learners is recommended.

10) Employer may avoid rigid interview and application process; allow them to demonstrate how they can do the job in real working setting. To make the TVET for all authority ma allow the institute to prepare and conduct different job readiness special short courses according to disable learner's ability with the help of DPOs and employers. Government may help them with special initiative and support. Online job portal for disable student's details information may prepare centrally of passing students also recommended for this purpose.

11) Authority should develop necessary guidelines for implementation of PWDs inclusion in TVET institute. A Project may be taken to develop institute barrier free, increase teacher's

capacity and to promote need base support to disable learner for education, health, carrier and awareness to change for recognition of disable persons rights in Bangladesh through TVET.

5.4 Limitations of the Study and Direction for Future Research

Limitations of the Study

Some factors were found to limit the study. One of them was the availability of disable learners. This study was conducted in Dhaka Polytechnic Institute and disable students of Diploma-In-Engineering courses only. Due to covid situation information were also collected through Telephonic and e-mail communication instate of face-to-face interview in some cases. Mixed methods studies are complex, labour intensive and require greater resources and time than those needed to conduct a single method study (Wisdow, J. & Creswell, J. W., 2013)

Direction for Future Research

Future research in this area should involve systemic, long-term development work across a range of sites and settings, which also allows for the examination of the impact of the innovations upon achievement. Such research is necessary if we are to advance knowledge about barriers of disable learner's education in TVET. The researcher would like to recommends some areas:

i)   The same study can be carried out in different areas or countries.
ii)   The same kind of study can be carried out on other forms of disabilities not covered in this study; such as Education of Physically Handicapped, Learning disabilities, various disadvantaged groups.
iii)   Study can be carried out on effectiveness of vocational training to students with disabilities.
iv)   Understanding barriers to accessibility in TVET skills programs.

5.5 Concluding Remarks

Main streaming and universal access for person with disabilities are the ultimate goals of disability movement. This means the removal of all cultural, physical, social and other barriers that prevent persons with disabilities from equally accessing opportunities and participating fully in all aspects of life.

Persons with disabilities face a sever discrimination and exclusion from education system which affects them in different ways. In Bangladesh person with disabilities (PWDs) never berried from applying for TVET admission but policy to encourage PWDs participation in TVET is only a recent phenomenon.

1) Present status of disable learner's participation in TVET is far behind from expectation. Institute does not achieve any success to disable learner's enrollment. To increase disable learner's enrollment, authority has no success to signing MOU with DPOs or established linkage with employer. Beside the govt. policy and quota in admission for disable learners, no institutional practice has developed yet to encourage the inclusion of persons with disabilities in that institute.

2) Physical structure of DPI is not disable supportive. Absents of some common facilities like accessible academic building and hostel, disable supportive wash room, water point, reasonable accommodation in class rooms and labs/workshops have largely limited the scope of disable learner's enrollment in that Institute. In fact, the institute has no capacity to enroll a 'wheel chair' or a 'blind' disable person as a learner. Study. found no initiative to develop barrier free infrastructure of that institute

3) Disable students admitted in Dhaka Polytechnic Institute are" mild" (100%) in disability category. Due to disability, they have some problems in daily life, but none of them need not to use any supportive device. Institute management believes that students with mild physical impairment are more likely to accepted in these field.

4) Teachers (100% respondents) have no training on disability. Institute personnel are aware about disability, it is important but not having the capacity to handle all categories of Disability. Teachers are unable to communicate with the disable learners in an appropriate manner. They are not provided with accessible teaching materials to assist them.

5) Activity of Focal Person is very weak. Information collection and management system is not effective. Study observes most of the disables do not know about disable student's scholarship. Out of 06 respondents only 01(17%) receiving disability scholarship. Some of them found as a part time worker in different odd jobs. Clear and details information of the present and ex-disable students, their family, problems they face in the institute, and their jobs related information etc. are not maintained properly.

6) Institute has failed to show any welcoming attitude to disable learners. Study found no poster, wall paint, or any hand bill to encourage disable learners. Disable Centre has failed to promote any motivational counselling or information sharing to the present students and also for the potential disable learners or with their guardians.

7) Disable learners of DPI are mainly from rural family. They come to know about TVET from local brother, not from school or any social organization. Besides their impairments, financial insolvency, negative attitude and stigma of family about the future of a disable child and lack of cooperation from society people are prevailing as a barrier to them. After certification they expect a good job for them as well as their family.

8) Disable learner's application in quota is found very few i.e not effective to attract the disable learners in TVET. Present admission system is centrally controlled with rigid cut-off mark. Institute authority has no scope to enroll or consider ability or inability, attitude of a disable learner.

9) Institute has no plan to meet the needs of the individual disable student's learning and the work in the preferred occupational field with certification that relevant skills have been acquired.

10) There are lacks of co-ordination between policy and institute level. Disability inclusion plan for TVET is not in proper action or plan is not properly developed yet to address the goal of main streaming disable learners through TVET. Lack in monitoring is also observed.

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Appendix-1
Questionnaire
A) **Interview Schedule of Disable Students:**
   (Confidential)
1. a) Name   b) Enrollment year and Technology
2. a) Semester/Year   b) G.P.A (S.S.C or Equivalent)
3. a) Fathers name   b) Mothers name
4. a) Present Address   b) Permanent Address
 c) Present residential Status   With family/Institute Hostel/Others
5. Enrollment status   Merit/Disable Quota/Others
6. a) Family Head   Father/Mother/Elder Brother/Others
    b) Monthly Income   Taka :
7. a) Family Member   b) Family has more than one disable member : Yes/No
8. Students in family-   General Education-
                                      Technical Education
9. Fathers Education   Primary/SSC/HSC/Graduate/Post Graduate
    And Occupation   Agriculture/Business/Govt. service/Private job

10. Mothers Education   Primary/SSC/HSC/Graduate/Post Graduate
    And Occupation   House wife/Business/Govt. service/Private job

11. Source of Educational   Father/Mother/Elder Brother/Others
    Expenses
12. Average Monthly   Taka
    Expenditure
13. Do you receive student   Yes/No
    scholarship of Disability

14. Please Mention your disability category and intensity of it

Categories	Please Tick Mark (√)	Describe Intensity
Autism		Low/Moderate/High
Physical		
Psychosocial		
Visual		
Speech		
Intellectual		
Hearing		
Deaf-blindness		
Cerebral Palsy		
Down Syndrome		
Multiple		
Others		

15. Causes of Disability: By birth/Accident/illness/wrong Treatment/Others.
16. User of Assistive Technology: (wheel Chair/White Stick/Hearing Aid/etc.
17. Do you need any help for movement? Yes/No.
18. Do you have disability registration number? Yes/No.

19. A) Why you enrolled yourself in Technical Education? Please describe.

b) Consider the following causes for your participation in Diploma in Engineering Education. (please tick mark in appropriate box,)

Causes	Please Tick Mark
Having special attitude for tech-education	
Scope for early entrance in job	
Opportunity for bright carrier development	
To avoid unemployment risk	

20. a) Present status of Physical/structural facility for disable learners in your Institute.
   i)   Accessible water point-- Yes/No.
   ii) Ramp/lift (wheel chair person) -- Yes/No.
   iii) Special wash room -- Yes/No.
   iv) Special lab/workshop-- Yes/No.
   v)   Special class room - Yes/No.
   vi) Residential facility for disable -- Yes/No.
   b) Do you face any problem? Please describe.

21. Do you receive any discrimination in your life due to your disability?
i) In Family – Yes/No
   ii) In society—Yes/No
iii) In Institute—Yes/No
        Please comments—

22. Please comments on your teacher's behavior/support that you-- like/dislike.
23. Please comments on your co-learner's behavior/support that you-- like/dislike.
24. What do you do in leisure time?
25. What is your future plan to do?
26. Please describe about the barriers of disable learner's participation in TVET and possible solution of it.

B) *Interview Schedule of Institute Management (Principal/Department Head)*

1) a) Name b) Designation
2) a) Educational qualification b) Department/Technology.
3) Please describe status of Physical facility of disable learners in your institute. (Comments on the following: Ramp/lift for wheel chair person, accessible water point, special wash room, special class room, lab/work shop and hostel facility for disable students, etc.)
4) Do you have any special initiative (like: seminar, poster, wall paint etc.) for increasing disable learners participation in your Institute? Please describe.
5) Do you think that present enrollment system is effective for disable learners? Please write your comments.
6) Write your opinion regarding non-fulfillment of 5% disable quota in TVET enrollment.
7) Please describe implementation status of in DTE action items to increase disable participation in TVET courses (Comments on Sign MoU with DPOs, Establish linkage for disable employment, Allocate 1% capital Expenditure for strengthen Institutional facilities, Prepare progress report on implementation)
8) Please describe your activity that you have taken for disability inclusion in your Institute. And what is your future to do.
9) a) What is your opinion regarding causes of low rate of participation barrier of PWDs in TVET courses.
   b) Identify of the following causes as a low rate of participation barrier in TVET (please tick mark in appropriate box, very important = 3, important =2 & less important = 1)

Causes	3	2	1
Limitation in physical Environment			
Not aware about the scope in TVET			
Low enrollment in primary level			
Low pass rate in Examination			
Financial insolvency of Family			
Limitation in external movement			
Non admission of disable learners in Technical education			
Lack of trained teachers			
Rigid to curriculum and revaluation			
Stigma in family			

10. a) what is your suggestions for increasing participation of PWDs in TVET.

b) Please Identify the following factors to increase PWDs participation in TVET (please tick mark in appropriate box, very important = 3, important =2 & less important = 1)

Factors	3	2	1
Special financial support			
Help for future jobs			
Introduce more suitable technology			
Special evaluation system			

Disable friendly Institute environment			
Increase social awareness program			

11) Please write in brief about the participation barrier of disable learners in TVET courses and probable solution of it.

c) Interview Schedule of Institute Teachers (Respondents: - Instructor, Workshop Super, Jr. Ins):

(Confidential)

1. a) Name   b) Designation and Department
2. Consider the following factors regarding disable learners (please tick mark in appropriate box, 5 = strongly agree, 4 = agree, 3 = undecided, 2 = Disagree and 1 = Strongly disagree)

Factors	5	4	3	2	1
Class attendance					
Skills in theory					
Skills in practical					
Examination results					
Behavior					
Law abiding practice					

3. Have you received any training regarding disability? Yes/no.
4. What is your opinion regarding present system of disable learners enrollment in TVET.
5. Please describe present status of physical facilities for disable learners in your institute.
6. a) What is your opinion regarding causes of participation barrier of PWDs in TVET.
   b) Identify of the following causes as a low rate of participation barrier in TVET (please tick mark in appropriate box, very important = 3, important =2 & less important = 1)

Causes	3	2	1
Limitation in physical Environment			
Not aware about the scope in TVET			
Low enrollment in primary level			
Low pass rate in Examination			
Financial insolvency of Family			
Limitation in external movement			
Non admission of disable learners in Technical education			
Lack of trained teachers			
Rigid to curriculum and revaluation			
Stigma in family			

7. a) what is your suggestions for increasing participation of PWDs in TVET.

b) Please Identify the following factors to increase PWDs participation in TVET (please tick mark in appropriate box, very important = 3, important =2 & less important = 1)

Factors	3	2	1
Special financial support			
Help for future jobs			
Introduce more suitable technology			
Special evaluation system			
Disable friendly Institute environment			
Increase social awareness programme			

8. please write in brief about participation barrier and probable solution of it for disable students.

D. *Interview schedule of policy makers:*
(Confidential)
1. a) Name   b) age
2. a) Designation   b) Organization
3. consider the following factors regarding disable learners.(please tick mark in appropriate box, 5 = strongly agree, 4 = agree, 3 = undecided, 2 = Disagree and 1 = Strongly disagree)

Factors	5	4	3	2	1
Govt. policy					
Legal frame work					
Attitude of office personnel					
Government Budget					
Stake Holders activity					

4. what is your opinion regarding the scope in TVET for disable learners in Bangladesh?
5. Please write in brief regarding participation barriers of disable learners in TVET courses and probable solutions for the improvement.

E. Observation checklist:

The observation was carried out at different times according to the teacher's preferences. The observation checklist in the classrooms/ workshops and institute campus was as follows:

i)   Teacher-learner interaction: main focus was to see how the teachers interacted with each other as well as with the students with disabilities during teaching.
ii)   Learner-learner interaction: focus was the interaction between students involving those with disabilities in the institute.
iii)   Teacher's presentation of teaching materials: the focus on was on how the teacher was able to manage the teaching material in relation to the children with disabilities.
iv)   Challenges encountered to disable learners in the institute campus.

Appendix No. 2

Category wise disability status in Bangladesh (2018-2020)

Category	2018	2019	2020
Autism	47236	51025	59590
Physical	727643	792118	1021921
Chronic Mental illness	55506	60331	78032
Vision	224751	242272	301767
Speech	119493	128073	151007
Intellectual	128413	139043	167006
Hearing	48118	52358	70198
Auditory And Visual	6796	7283	9307
Cerebral Palsy	75146	82372	92911
Multidimensional	185678	195322	212821
Down Syndrome	3528	4172	4791
Others	13555	14554	16177
Total	1635863	1768923	2185528

Source: Department of Social Service, Ministry of Social Welfare.

Appendix No. 3

Number of Disable Student's in different Education Level (2016-2020)

Level/Year		2016	2017	2018	2019	2020
Primary level (up to class- 5)	Male	808	2134	3648	5285	11411
	Female	403	1123	1853	2838	6096
	Total	1211	3257	5501	8123	17507
SSC level (6 to 10)	Male	1376	3522	4927	6815	13233
	Female	511	1411	2159	2976	2983
	Total	1887	4933	7086	9791	16216
HSC level (11-12)	Male	765	1617	1821	2034	2891
	Female	278	539	814	795	1027
	Total	1043	2156	2635	2829	3918
Graduate level	Male	452	998	1096	1214	1882
	Female	128	317	418	394	630
	Total	580	1315	1510	1608	2512
Post Graduate level	Male	344	758	705	783	1022
	Female	93	183	209	214	289
	Total	437	941	914	997	1311
Total	Male	3745	9029	12197	16131	30439
	Female	1413	3573	5453	7217	11025
	Total	5158	12602	17650	23348	41464

Source: Department of Social Service, Ministry of Social Welfare.

Appendix No. 4

Category wise disable student's information in Technical Education Under DTE.

Category	Number of disable students
Autism	11
Physical	467
Psychosocial	15
Visual	65
Speech	79
Intellectual	19
Hearing	45
Deaf-blindness	5
Cerebral Palsy	4
Down Syndrome	1
Multiple	9
Others	17
Total	737

Source : Online Information-(www.techedu.gov.bd), DTE, January-2021.

Appendix No.5

Some Personal Information of Disable Learner's (Respondents) of Dhaka Polytechnic Institute

(N = 06)

Factors			N		Percentages (%)
G.P.A in S.S.C	Below 4.5		1		16.67
	4.6 to 4.99		2		33.33
	5		3		50
Technology	Civil		3		50
	Electrical		2		33.33
	Mechanical		1		16.67
Admission nature	Disability Quota		2		33.33
	Ward Quota		1		16.67
	Merit		3		50
Present Residential status	With family		1		16.67
	Ins. Hostel		2		33.33
	Others (mass)		3		50
Family Head	Father		5		83.33
	Mother		1		16.67
	Others		0		00
Monthly income (Taka)	Up to 6000		3		50
	7000-20000		2		33.33
	20000 above		1		16.67
Father Occupation	Govt. service		1		16.67
	Agriculture		3		50
	Business		1		16.67
	Others		1		16.67
Disability category and Nature	Physical	Mild	2	5	83.33
		Moderate	3		
		High	1		
	Speech	Mild	0	1	16.67
		Moderate	1		
		High	0		
	Hearing	Mild	0	0	0
		Moderate	0		
		High	0		

Source: collected data.