



**MASTER OF SCIENCE IN TECHNICAL EDUCATION
(ELECTRICAL AND ELECTRONIC ENGINEERING)**

**A STUDY TO IDENTIFY THE BARRIERS OF IMPLEMENTING THE PROPOSED
COMPETENCY BASED TRAINING PROGRAMME IN TVET INSTITUTIONS IN
BANGLADESH**

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DHAKA-BANGLADESH

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**A Study to Identify the Barriers of Implementing the Proposed Competency Based
Training Programme in TVET Institutions in Bangladesh**

Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of
Master of Science in Technical Education Specialization in **Electrical and
Electronic Engineering**

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ACCEPTANCE

We hereby recommend that this thesis prepared by Mohammad Mahmudur Rahman entitled “A STUDY TO IDENTIFY THE BARRIERS OF IMPLEMENTING THE PROPOSED COMPETENCY BASED TRAINING PROGRAMME IN TVET INSTITUTIONS IN BANGLADESH.” has been accepted as fulfilling the part of the requirements for the degree of Master of Science in Technical Education (Electrical and Electronics Engineering).

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DEDICATION

I dedicate this thesis to my family members and all my respectable teachers who guided me with affections and love and their dedicated partnership for success in my life.

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Abstract

The purpose of the study was to identify the Barriers of Implementing the Proposed Competency Based Training Programme in TVET Institutions in Bangladesh. The descriptive survey was used for the study. Eleven research questions guided the study. The simple random and purposive sampling technique was used. The sample size was 40 from the TVET teachers in Bangladesh. Data were collected from the selected 8 TVET institute in Dhaka district in Bangladesh. Data were collected through the use of a questionnaire which was based on a five point Likert scale. Data were analyzed by using Chi square test at 0.05 significant levels. The study revealed that poor administrative support , lack of CBT trained up teachers, CBT Technical Teachers Institute, inadequacy of modern laboratory facilities, weak linkage between technical institutes and industry, lack of public awareness and being used to with traditional curriculum emerged as barriers of implementing the proposed competency based training programme (CBT) in TVET institutions in Bangladesh .

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LIST OF ACRONYMS

ADB	Asian Development Bank
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BANBEIS	Bangladesh Bureau of Statistics
BBS	Bangladesh Bureau of Statistics
BEF	Bangladesh Employers Federation
BNFE	Bureau of Non Formal Education
BMET	Bureau of Manpower, Employment and Training
BTEB	Bangladesh Technical Education Board
BNVQF	Botswana National Vocational Qualifications Framework
BOCCIM	Botswana Confederation of Commerce, Industry and Manpower
CBT	Competency-based training
CBT&A	Competency Based Training and Assessment. Training designed to enable skills/competencies to be assessed
CARICOM	Caribbean Community Cede fop European Centre for the Development of Vocational Training
DTE	Directorate of Technical Education
EA	Executing agency
ECNSDC	Executive Committee of the National Skills Development Council
EQF	European Qualifications Framework
ETF	European Training Foundation
EC-ILO	European Commission and International Labor Organization
FBCCI	Federation of Bangladesh Chambers of Commerce & industry
GNI PPP	Gross national income purchasing power parity
GoB	Government of Bangladesh
GTZ	German Technical Cooperation

	Human Resource Development
HRD	
HSC (Voc)	Higher Secondary Certificate (Vocational)
HDI	Human Development Index
ILO	International Labor Organization
INTES	Turkish Construction Industry Employers' Union
ISC	Industry Skills Council
IT	Information Technology
IVTB	Industrial and Vocational Training Board
LFIS	Loan Financial Information System
MEWOE	Ministry of Expatriate Welfare & Overseas Employment
MoE	Ministry of Education
MOLE	Ministry of Labor & Employment
MPO	Monthly Pay Order for the teachers and staff of private institutions
NQFs	National Qualifications Frameworks
NTVQF	National Technical and Vocational Qualifications Framework
NVQs	National Vocational Qualifications
NVQF	National Vocational Qualifications Framework
NCB	National competitive bidding
NCSDT	National Council for Skills Development and Training
NGO	Nongovernment organization
NPRS	National poverty reduction strategy
NSDC	National Skills Development Council
NTC	National Training Council
NTVQF	National Technical and Vocational Qualifications Framework
NVQF	National Vocational Qualification Framework

OECD	Organization for Economic Cooperation and Development
PPP	Public Private Partnership
PRSP	Poverty Reduction Strategy Paper
PWD	Persons with Disabilities
PIC	Project implementation committee
PIU	Project implementation unit
PSC	Project steering committee
RPL	Recognition of Prior Learning
SADC	Southern African Development Community
SAQA	South African Qualifications Authority
SCQF	Scottish Credit and Qualifications Framework
SENCE	National Service for Training and Employment
SQA	Scottish Qualifications Authority
SDR	Special drawing rights
SME	Small & Medium Enterprises
SOE	Statement of expenditure
SSC (Voc)	Secondary School Certificate (Vocational)
SWC	Sector working committee
TSC	Technical School and College
TTC	Technical training center
TTTC	Technical Teachers Training College
TVET	Technical and Vocational Education and Training
VTI	Vocational Teachers Training Institute

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CHAPTER I

INTRODUCTION

1.1 BACKGROUND

With time the Technical and Vocational Education and Training (TVET) of Bangladesh has lost link with industries or, in other words, Bangladesh's TVET system could not keep pace with its own and international rapid technological and industrial growth. It remained used to with its traditional supply oriented approach of TVET. As a result, the competence gap between the job market requirements and the qualifications of the TVET graduates has been growing bigger and bigger.

In order to address this issue the Government and the donor organizations have launched different projects to reform the traditional TVET into Competency Based Training (CBT). Currently a piloting of the newly introduced CBT is underway. However, there exists a mixed opinion about the success of this CBT approach among the different stakeholders. Therefore, this study examines the stakeholders' opinion and identifies several barriers of implementing the CBT in Bangladesh.

1.1.1 TVET in Context

Bangladesh is one of the world's most densely populated countries, with its 162.2 million (UN, 2009) people living in an area of 144,000 square kilometers. The population is relatively young, with the 0 - 25 ages group comprising 60%, while 3% are 65 or older. Bangladesh has 72.5 million labor forces. The major employment sector of this extremely poor country is agriculture, but it is unable to meet the demand for jobs. Thus many Bangladeshis - in common with citizens from other countries in the region - seek work abroad. The country is trying to diversify its economy, with a priority of industrial development. Despite continuous domestic efforts and assistance from the international donor community to improve economic and demographic prospects, Bangladesh remains a developing nation (UNFPA, 2007). Its per capita income in 2008 was US\$520 compared to the world average of \$10,200 (BBC, 2010). The education expenditures are 2.7% of GDP (2005). The literacy rate of population aged 7 years and over is slightly higher, 57.53% are literate at the national level, and the corresponding rates for males and females are 60.15% and 54.84% respectively. (Bangladesh Bureau of Statistics, 2011). Between 1980 and 2007 Bangladesh's human resource development index (HDI) rose by 1.86% annually from 0.328 to 0.543, which gave the country a rank of 146th out of 182 countries (UNDP, 2009).

Its natural resources include natural gas, fertile soil and water only (Website: Background Note Bangladesh (US Department, 2010)). Bangladesh's main industries are ready-made garments and knitwear, cotton, textiles, tea, sugar and food processing, jute, leather, paper, newsprint, cement, chemical fertilizer, pharmaceutical products, light engineering, electrical machines (transformer only), electronic devices (power supplies, et cetera), computer assembly, more recently ship-

building, et cetera. Its main exports are garments, fish, jute goods, leather products, medicine, et cetera (Haolader, 2010, p.2).

1.1.2 The Status of TVET Provision in Bangladesh

In Bangladesh TVET is provided by government and private providers. In the public sector at least nineteen Ministries run various types of technical training centers. These training centers provide short and long courses. Two of the most significant Ministries involved are the Ministry of Education (Directorate of Technical Education), and the Ministry of Expatriate Welfare and Overseas Employment (Bureau for Manpower Employment and Training). The former runs a number of technical schools and colleges (TSCs) and Polytechnics while the latter operates numerous technical training centers (TTCs).

Tables 1 and 2 indicate the number of institutions and kinds of programs delivered at these institutions. The most common courses available are secondary school certificate (vocational) – SSC (Voc); Higher Secondary Certificate (HSC) (vocational) – HSC (Voc) at the TSCs and TTCs, as well as Diploma in Engineering courses at the Polytechnics. Many institutions run a variety of shorter courses ranging from 3 to 6 months. There are considerably more private sector institutions than government institutions although the former generally run information technology or business management courses.

Table 3 indicates some of the courses available at the SSC (Voc) and HSC (Voc) levels while Table 4 shows the trade short courses available. The latter are 360 hours each and about 18,000 persons complete these courses each year.

Table 1: Numbers of Private and Government Training Institutes

Govt. TVET Institutions	Private training institutions
<ul style="list-style-type: none"> ■ Polytechnic Institutes: 49 ■ Tech. School & College: 64 ■ Tech. Training Centre: 38 ■ Textile Institute: 3 ■ Agriculture Institute: 13 ■ Forestry Institute: 1 ■ Marine Institute: 1 ■ Textile Vocational Institute: 40 	<ul style="list-style-type: none"> ■ Polytechnic Institutes: 134 ■ HSC (BM) Inst.: 1327 ■ Secondary (Vocational) Schools: 1595 ■ Textile Institute: 23 ■ Agriculture Institute : 88 ■ Institute of Medical Technology: 49

(Source: Shears, 2011, p.6)

Table 2: Types of TVET Programmes Available

Government	Private
<ul style="list-style-type: none"> ■ Diploma In Engineering (4 years program) ■ Diploma in Agriculture, Fisheries, Forestry ■ HSC (Voc)-2 years ■ SSC (Voc)- 2 years ■ Certificate courses - 3 to 6 months 	<ul style="list-style-type: none"> ■ Diploma in Engineering (4 years program) ■ Diploma in Agriculture ■ HSC (BM)- 2years ■ SSC (Voc)- 2 years ■ Certificate courses - 6 months

Table 3: Courses Available at Technical School and College Institutions

SSC (Vocational) trades (Grades 9-10 Equivalent):	HSC (Vocational) trades (Grades 11 – 12 Equivalent):
<ul style="list-style-type: none"> ■ Refrigeration & Air Conditioning ■ General Electronics ■ Fish Culture & Breeding ■ Welding & Fabrication ■ Computer & IT ■ Dress Making ■ Farm Machinery ■ General Electrical Works ■ Automotive ■ Poultry Rearing & Farming ■ Civil Drafting with CAD ■ Machine Tools Operation ■ Building Maintenance ■ Wood Working/Carpentry 	<ul style="list-style-type: none"> ■ Refrigeration & Air Conditioning ■ Electronic Control and Communication ■ Fish Culture & Breeding ■ Welding & Fabrication ■ Computer Operation & Maintenance ■ Clothing & Garments Finishing ■ Agro Machinery ■ Electrical Works & Maintenance ■ Automobile ■ Poultry Rearing & Farming ■ Drafting and Civil ■ Machine Tools Operation & Maintenance ■ Building Maintenance & Construction ■ Industrial Wood Working

Table 4: Basic Trade Courses (6 months Duration)

<ul style="list-style-type: none"> ■ Agro based food ■ Audio-video System ■ Carpentry ■ Computer ■ Drafting Civil ■ Dress Making & Tailoring ■ Farm Machinery ■ Food processing & Preservation 	<ul style="list-style-type: none"> ■ General Electrical Mechanics ■ Plumbing & Pipe Fitting ■ Refrigeration & Air-conditioning ■ General Mechanics ■ Machinist ■ Weaving ■ Welding, etc
--	--

At the Polytechnic level the most common programme is the four year Diploma Engineering with a variety of technical areas available. Table 5 refers.

Table 5: Programmes Available at Polytechnic Level

<ul style="list-style-type: none"> ■ Civil Technology ■ Mechanical Technology ■ Electrical Technology ■ Electronics Technology ■ Computer Technology ■ Graphic Arts Technology ■ Glass Technology ■ Architecture Technology ■ Environment Technology ■ Garment Technology ■ Survey Technology 	<ul style="list-style-type: none"> ■ Chemical Technology ■ Food Technology ■ Power Technology ■ Automobile Technology ■ Refrigeration & Air Conditioning ■ Surveying Technology ■ Ceramic Technology ■ Mechatronic technology ■ Printing Technology ■ Mining technology ■ Marine Technology
--	--

1.1.3 The Technical and Vocational Education and Training in Bangladesh

Bangladesh has historical links with Britain and it has inherited an education system based on the UK model (British Council 2001). The present education system of Bangladesh may be broadly divided into three major stages, viz. primary, secondary and tertiary education.

The post-primary education is classified into four types in terms of curriculum: general education, technical and vocational education, professional education and madrasah education (Figure 2.9).

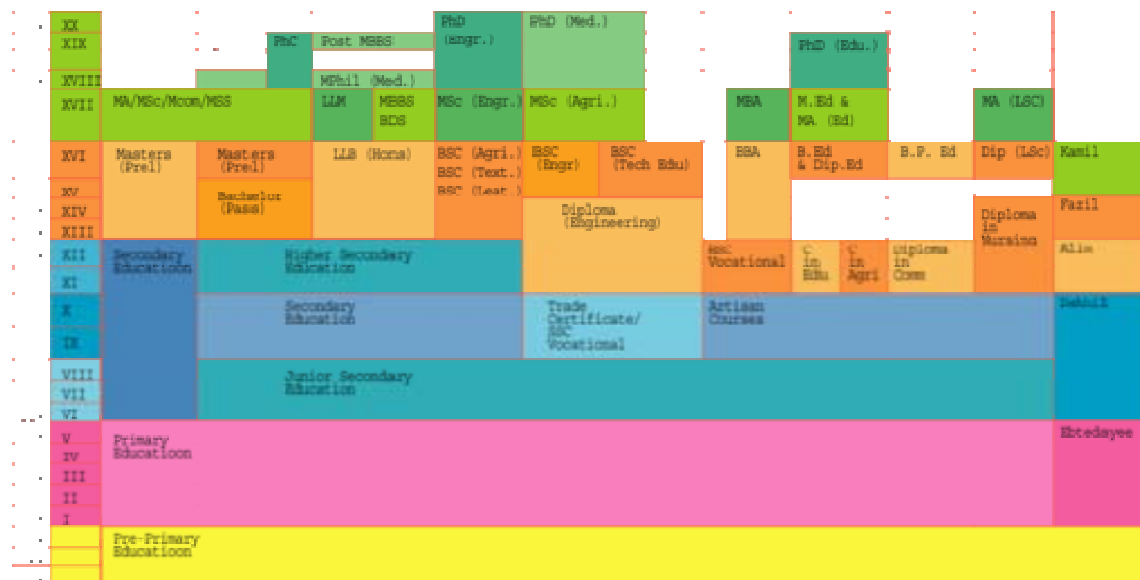


Figure 1: Basic structure of the education system of Bangladesh (BANBEIS, 2010)

Primary education is comprised of 5 years of formal schooling (Class/ Grades I – V). Education, at this stage, normally begins at the age of 6+ to the age of 11 years.

Secondary education is comprised of 7 (3+2+2) years of formal schooling. The first 3 years (grades VI-VIII) are referred to as junior secondary; the next 2 years (Grades IX -X) are secondary while the last 2 years (Grades XI - XII) are called higher secondary. There is a diversification of courses after three years of schooling on the junior secondary level. Vocational and technical courses are offered in vocational and trade institute/schools. Moreover, there are high schools where SSC (vocational) courses have been introduced.

Tertiary education is comprised of 3-6 years of formal schooling. The minimum requirement for admission to higher education is the higher secondary certificate (H.S.C).

Technical and Vocational Education and Training

The Technical and Vocational Education and Training (TVET) in Bangladesh operate at Certificate (secondary) and Diploma (higher secondary) level. It is offered in a range of technical specialties, such as agriculture; business; building and construction technology; clothing and textiles; electrical, electronics, computer, information & communication technology; food and nutrition; mechanical and automobile, etc. It is, generally, offered through the technical departments of secondary schools, technical schools and colleges (TSCs), polytechnic institutes and other non-government/ private training institutes. It is provided by formal, non-formal and informal means.

1.1.4 TVET at Secondary Level

Certificate (also called Vocational) courses start from secondary level. The certificate courses prepare skilled workers in different vocations starting from ninth grade after completion of three years of schooling in secondary school. At this level the courses are diversified in different occupations spread over 1 to 2 years duration.

1.1.5 TVET at Higher Secondary Level

At the higher secondary level there are two programmes - the 4-Year Diploma courses and the 2-Year Higher Secondary School Certificate (Vocational) courses.

The *4-Year Diploma* courses (mid level technical education programme) prepare the diploma engineers at the mono/ polytechnic institutes. These courses spread over 4 year's duration. The prerequisite for these courses is the secondary school certificate (10 years schooling). They are full-time school based, including 1 industrial attachment semester. They are offered in 28 different technological areas in 41 government polytechnic institutes and 4 specialised institutes. There are more than 100 private polytechnic institutes offering Diploma in Engineering courses mainly in computer and electronics technology (DTE, 2010).

The *2-Year Higher Secondary School Certificate (Vocational) (the H.S.C. (Voc))* courses have been introduced more recently at the higher secondary level mainly in government managed vocational training institutes (VTIs)(renamed as technical school & college (TSC)).

Examination

Diploma-in-Engineering programme: The 4-year diploma engineering course in Bangladesh is divided into 8 semesters. There is continuous assessment (class participation, attendance, homework, etc.), where students are assessed by class teachers over the whole semester, and a final examination held at the end of each semester. The final result is published as cumulative grade point average (CGPA). Qualifications are awarded by BTEB at the end of four years (minimum requirement) upon successfully passing the examinations. Because a student has to accumulate a fixed number of credits which are distributed over the four years, a qualification in a time shorter than four years is not possible. Thus the minimum duration of the diploma programme is four years. *H.S.C. (Voc) programme:* There is a final examination at the end of two years. Certificates are awarded based on these examination results. (Haolader, 2010, pp.50-53 w.r.t. BANBEIS 2010).

1.1.6 National Skills Development Policy

Skills development depends on many different sectors, including the private sector, non-profit sectors, NGOs and civil society; as well as the large number of government ministries delivering skills based education and training. The coordination and delivery of skills in Bangladesh for the betterment of the nation as a whole can be improved through the Skills Development Policy.

The government has expressed in its new education policy that in an era characterized by the challenge of rapid technological change, globalization, economic uncertainty and diminishing resources there is no alternative to education and training that comply with modern and international standards. Therefore, TVET has been assigned high priority in its current national education policy (2011). Meeting national demand the country can increase its foreign exchange earnings by exporting its skilled manpower, since there is a demand of skilled manpower in international job markets. Therefore, the government aims to train the country's huge workforce considering national and international job market requirements. Furthermore, it is planning to introduce a modern apprenticeship training programme in the country (National Skills Development Plan' 2011, pp. 17 – 18).

As referred to the National Skills Development Policy 2011, the government has already made commitments in Poverty Reduction Strategy Paper (PRSP) II that (ILO, 2007, p. 49):

- a. TVET students shall comprise 20% of all secondary students (currently it is 3%);
- b. Enrolment in TVET should increase by 50%; and that
- c. Women's enrolment should increase by 60%.

1.2 STATEMENT OF THE PROBLEM

The Statement of the problem was to identify the Barriers of Implementing the Proposed Competency Based Training Programme in TVET (Technical and Vocational Education and Training) Institutions in Bangladesh.

1.3 OBJECTIVE OF THE STUDY

The objectives of the study were to:

1. identify the barriers of implementing the proposed competency based training programme in TVET (Technical and vocational Education and Training) Institutions in Bangladesh.
2. survey the opinion of TVET (Technical and Vocational Education and Training) teachers regarding this proposed competency based training programme which is now new in Bangladesh.

1.4 RESEARCH QUESTIONS

Through this research study answers of the following questions were realized:

1. What are the problems related to the Administration of TVET (Technical and Vocational Education and Training)?
2. What are the problems related to Competency Based Teacher's Training Programme?
3. What are the problems related to Design Competency Based Curriculum?
4. What are the problems related to Public Awareness?
5. What are the problems related to Social Problem?
6. What are the problems related to Industry-institution linkage?
7. What are the problems related to Laboratory facilities?
8. What are the problems related to Assessors?
9. What are the problems related to Political Issue?
10. What are the problems related to Bureaucratizes?
11. What are the problems related to financial supports?

1.5 SIGNIFICANCE OF THE STUDY

One of the major problems of implementing the CBT is the *identification of specific skills and units of competence* at different levels (level descriptors) by occupation, as the basis for the determination of qualification levels. It is a long and hierarchical process involving a number of groups (i.e. industry associations, Industry Skills Committees [ISC], technical subcommittees, the Curriculum Development Committee [CDC] and finally the Executive Committee of the National Skill Development Council [NSDC]). The EC-ILO project is managing this costly and time consuming task for a limited period of time. The overall process will be managed by the BTEB in the longer term and will be a very demanding process if all occupations and trades are to be covered. Thus *the preparation of a complete set of skills standards, curricula and training materials and the continuous review of them will be a momentous task for the institutions involved*. This is seen as a problem, especially because the exercise is not absolutely home-grown. Rather it is driven by external experts and donor support – a situation which always involves a degree of uncertainty in the economic and political context of a country like Bangladesh.

Given that implementation will be a big task, interviews with members of the Sectoral Working Committees (SWC)/Industry Skills Committees (ISC) gave the impression that the government and donors will need to take a very proactive role in implementation. However, once donor support is withdrawn, it is not clear how the programme will run nationwide. Quality-assured, competence-based training requires competent trainers, assessors and managers of institutions in large numbers. Development of such personnel is a big task, which cannot be accomplished overnight. At present, only 13 selected occupations in four sectors are being worked on in terms of ascertaining units of competencies. This translates into 350 units for which training curriculum and training materials will be required. It is easy to see that the complete task across all important sectors and occupations will be an overwhelmingly large one in terms of the technical manpower and resource investment needed. (Mia, 2010, pp. 45 - 48)

The Government of the Bangladesh is trying to reduce poverty through reforms of technical and vocational education and training policies and systems. This policy is ensuring for how more people can acquire employable skills and generate income through wage-earning jobs or self-employment. The Competency Based Training (CBT) ensures that the TVET system in Bangladesh is better placed to serve the skill needs of employers and the labor market. But in implementing the Competency Based Training (CBT) there are so many barriers are faced by the teachers of this programme. Identification of these barriers are the main concerned of this study.

1.6 THE HYPOTHESES

There are some barriers for implementing the proposed competency based training programme in TVET (Technical and Vocational Education and Training) institutions in Bangladesh.

1.7 DELIMITATIONS

The field of study kept delimited to only technical and vocational education training institutions in Bangladesh where new competency based training programme in TVET (Technical and Vocational Education and Training) is being implemented.

1.8 ASSUMPTIONS

This study will provide the solution of barriers of implementing the Proposed Competency Based Training Programme in TVET (Technical and vocational Education and Training) Institutions in Bangladesh.

1.9 LIMITATIONS OF THE STUDY

The study was completed within a very short duration. For this reason the sample was chosen only from Dhaka district for data collection.

1.10 DEFINITION OF TERMS

Assessment Criteria

The specification of the expected performance demonstrated by the student or earner at the conclusion of the learning experiences in a particular module or course. It is used to assess the necessary knowledge, skills and attitudes, reflecting the performance standard in the relevant industry or competency standards.

Assessment method

Assessment methods may include observation, simulation, questioning, presentation/ demonstration and written assessment. The various methods or techniques used to gather evidence of sufficiency and quality in which to make a sound judgment on the competency student or learner

Basic Competency

Basic competency is a cluster of related skills, knowledge and attitudes that is simple and fundamental in most jobs, occupation or responsibility in the same level of qualifications and that is expected of the individual in the world of work. For instance, all skilled workers are expected to “perform mensuration and calculation” or to “observe safety rules and practices”; or similarly, a technician is expected to “lead a team” or “prepare the scope of work” responsibilities

Certification of Competency

This is the culmination of the CBT process in which the student or trainee is awarded a certificate on the level of competency that is usually based on a National Qualification Standard. For instance, after completion of a CBT course and the corresponding assessment conducted by a duly accredited assessor or assessment agency, a National or Federal Certificate of the student's or candidate's competency (e.g.: Electrician – Federal Certificate II) is awarded if has the competency of a skilled Electrician.

Common Competency

Common competency is a cluster of related skills, knowledge and attitudes that is similarly done across a cluster of jobs in a particular trade or occupation in the same level of qualifications that is expected of the individual in the world of work. While a basic competency is similarly required in most jobs, a common competency is usually restricted in one cluster of occupations. For instance, common competencies in measurements in the area of construction are essentially different from that of mechanical trades, or electronics.

Competency

Competency is a cluster of related skills, knowledge and attitudes that forms part of one's job or occupation that correlates with and measured by the performance standards set by industry, and that can be developed and improved through training and development. Competency is based on performance of tasks identified by experts in the given occupation.

Competency-Based Curriculum (CBC)

A competency-based curriculum is a framework or guide in the form of a *course design* for a particular field or occupation and a series of **modules** of instruction that are based on competency standards, with corresponding learning outcomes, assessment criteria, contents, conditions and methodologies of instruction, and assessment method. The competency-based curriculum specifies outcomes, which are consistent with the requirements of the workplace as agreed through the industry or community consultations. *Where competency standard do not exist, curriculum developers need to clearly identify workplace standards and requirements as a basis to identify the outcomes of the competency-based curriculum.*

Competency-Based Training (CBT)

A training system that organizes instruction based on competency standards and evaluates how well the student performs after instruction according to a set of performance standard. It refers to a systematic approach to organizing instruction that focuses on defining in measurable terms what students are to learn and then evaluating how well they can perform designated tasks after instruction.

In a CBT system, the unit of progression is mastery of specific knowledge and skills and is learner- or participant-centered. CBT represents a key policy shift in the delivery system of TVET. Two key terms used in competency-based training are:

Skill—A task or group of tasks performed to a specific level of competency or proficiency which often use motor functions and typically require the manipulation of instruments and equipment (e.g., house wiring, armature winding). Some skills, however, such as counseling, are knowledge and attitude-based.

Competency—A skill performed to a specific standard under specific conditions. A competency is defined in terms of what a person is required to do (performance), under what conditions it is to be done (conditions) and how well it is to be done (standards).

Competency-based Technical Education and Vocational Training (CBTVET)

CBTVET or the application of CBT in TVET is a systematic approach in organizing and providing instruction in measurable terms what the student has to learn in a particular technical or professional skill, trade or occupation, and then evaluating how well the student perform/demonstrate the knowledge or skills that were taught. Performance in terms of technical knowledge and skills by various means is made to determine the mastery or level of competency.

Competency Standard

The description of what individuals do in the workplace at various levels and the standard set by the workplace or the industry; defines or specifies how well the worker or trainee should perform a job or function. Likewise, it identifies the characteristics possessed by people that enable them to be either assessed or judged competent in a particular job or occupation.

Course design

This is a major element of the CBC that defines the title of the course and its description, qualification level and units of competency, course outcomes, course structure and competency analysis, assessment and instructional delivery, and the list of resources and qualifications of instructors.

Course Title

This refers to the title or name of the course design of a particular technology, industry, or occupation, reflecting employment needs as outlined in the competency standard.

Core Competency

Core competencies are the main group of skills, knowledge and attitudes that are unique for a particular trade, occupation or technology. These are competencies that are used only on a particular trade, occupation or technology; or allied trades using similar material, such as wood technology or metal technology.

Curriculum

In general, curriculum is a set of courses organized and offered by an educational institution with the purpose of attaining a set of learning objectives or goals or learning a set of knowledge, skills, and attitudes within a specified period. For instance, a TVET curriculum is a course or set of courses on a particular technical field, trade or occupation (e.g. automotive technology; civil or construction technology; electrical technology, or mechanical technology) for the purpose of preparing an individual for employment or promotion on the job.

Curriculum Development Team

This is a group of people representing industry, curriculum developers and teachers or trainers experienced in the field/industry organized to develop a curriculum. The team may work as a group or assign each member a part to accomplish at their own phase and time until the curriculum is completed.

DACUM

It simply means developing a curriculum. A method of occupational (or task) analysis, where occupational experts in a particular trade or technology come to a workshop led by a trained facilitator, to provide input on the specific tasks, knowledge and skills required to perform them.

Entry Requirements

This is a list of requirements that the student must possess to be allowed to participate or attend the teaching-learning session of a particular module of instruction. It is distinct from the institutional requirements that are required of the student upon admission to the school.

Industry

In this Manual, the term industry is used generally to include all the sectors of the economy or the community such as manufacturing firms, service shops, business establishments, government agencies, and NGOs that employs the mid-level technical manpower that are trained by TVET institutions as well as colleges and universities and other training institutions.

Learning Conditions

The requirements under which the teaching-learning process and assessment will be performed. These may include a list of tools, equipment and materials, training facilities, learning resources such as books, manuals, multi-media and other resources. It also specifies the scope or range of the equipment and facilities to be assessed.

Learning Outcomes

These are competencies (technical knowledge, skills and attitudes) learned or acquired by the student or trainee on a particular module, course, or curriculum. They are expected competencies developed under a particular unit or module of instruction.

Module Contents

These are specific knowledge, skills and attitudes or learning experiences that are covered to be address expected learning outcomes.

Module Description

This is a statement that describes what the module is all about, its scope and delimitation.

Module Duration

This refers to the estimated or suggested length of time (in hours) spent teaching learning a particular module.

Module (of Training)

Also known as *module of instruction*, it refers to the other element of the CBC that defines how the competency or elements of the competency is organized for instructional purposes based on a set of competency standards.

Module Title

This refers to the competency or elements of the competency that is developed into a module or unit of instruction or training.

National Qualification Framework

A structure of well defined and nationally accredited or recognized qualifications which are awarded in predetermined levels. It also refers to the structure or path through which formal, non-formal and informal education and training are all recognized and credited towards a particular qualification.

Qualification

A set or package of standards considered to be worthy of recognition in a certificate issued by a duly recognized institution. It also refers to the possession or accomplishment of acquiring certain skills, knowledge and attitudes or experiences that are considered worthy and essential for entry, promotion or upgrading on the job.

Semi-Skilled

This refers to the basic level of competency that is mostly routine, predictable, and uncomplicated tasks. Because of his basic level competency, the semi-skilled person usually needs somebody to oversee and direct his work activities. With diligence, hard-work and willingness to learn on-the-job, a semi-skilled person especially a graduate of at least one-year TVET program, can easily advance to the level of a skilled person.

Skilled

This is the term for a highly trained or experienced person whose competency in a particular occupation or trade is carried out in a significant and broad scope in various contexts. A skilled person performs some tasks that are complex or that have some autonomy and individual responsibility and that often require cooperation with other people in the work environment.

Technical and Vocational Education and Training (TVET)

Technical and Vocational Education and Training (TVET) is concerned with the acquisition of knowledge and skills for the world of work. The goal of TVET system is to ensure that young people can find and follow satisfying careers in an economy that has a continuing supply of new workers with skills and attitude required by industry and business.

The world of TVET is unique in the field of education. The school system prepares students for the next level or grade up through University. TVET prepares learners for employment and then helps them to continue their education part-time and/or full-time. It is based on individuals mastering skills and the concepts behind those skills, over a working lifetime to get a first job and then remain employable as technology and society change. Throughout the course of history, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: Apprenticeship Training, Vocational Education, Technical Education, Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc. Several of these terms are commonly used in specific geographic areas.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

The researcher tried heart and soul to collect research works for review purposes but did not find any research works done by earlier researchers neither of Masters level nor of Ph.D. level scholars. Finally the researcher was able to find out some related documents developed by different Govt. and Non-Govt. organization which have reviewed under the following captions.

2.2 NEEDS AND RATIONALE OF TVET

Education, broadly perceived as a seamless continuum of lifelong learning, is essential for human resource development at every age level. Vocational education forms an effective means to improve the status and character of living patterns of the people, to help intellectual, social and emotional development of the individuals and to enable them to enter into productive and meaningful life. However, much of the discussion on this topic relates to its theoretical underpinnings. A few orientations of such discussion can be traced in quite a prominent manner:

First, vocational education can claim its justification from Dewey's pragmatist epistemology. Dewey emphasized that 'learning should be directly relevant for the active interests and concerns which pupils have - or will have - in their out-of-school lives, in their private lives and in their future roles as workers and citizens'. Georg Kerschensteiner³ asserted that, the masses do not need 'intellectual schooling', but rather consistent training for industrious, conscientious, solid and neat work. Second, the support for vocational education can also be found in the concept of polytechnic education. This concept seeks to integrate 'theory' (academic studies) and 'practice' (vocational training), stressing the educative dimensions of study and work. This socialist rhetoric has shaped education systems in many developing countries, including India.

The third justification for vocational education can be drawn from populist or egalitarian ideas. Here the argument mainly rests on the need for equality of educational opportunity and it opposes any form of elitism. Therefore, the 'relevance of the world of work' and 'equity considerations' can be seen as the rationale for the initiation of vocational education programmes in many developing countries. However, political (at both macro and micro levels) and economic motives have influenced the establishment of vocational education programmes in many developing countries in the recent years. The socialist stance, nonetheless, features in policy rhetoric and operates largely, in the micro-political domain. On the fourth dimension, educational planners all over the world, have a philosophical approach that the ills caused by general education, including unemployment, inferior outlook for physical labor, lack of work culture and required skills for performing a job among students, lack of

[3]. Georg Kerschensteiner (1854-1932) was a leading educationist of Wilhelmina Germany, and is recognized throughout Europe as an innovator in the area of vocational education; and particularly the founder of vocational education in Germany.

skilled workers for middle level jobs etc. may be cured by the spread of vocational education. From this viewpoint, most of the countries of the world have introduced or are attempting to introduce vocational education as an option to students under different approaches.

'UNESCO (1988) views vocational and technical education as an essential factor in the development process on two grounds - economic and social: "Technical and vocational education are the connecting links between the school system and the employment market, which mean that developments in technical and vocational education are intimately linked to general trends in the economy and labor market and are particularly susceptible to the efforts of technological change, the speed to which will probably be affected by its social acceptance.' The industrialized countries, on the one hand, emphasize the availability of skilled manpower for retooling their existing industries and developing new ones; the developing countries, on the other hand, need this mainly for modernizing their agriculture and for advancement of industries. In social terms, vocational education is required to prepare young people for employment in the areas corresponding to their talents and aspirations, and to ensure that adults can adapt to changes in the employment structure and in their ambitions so as to achieve career and personal satisfaction and thus promoting development of a cohesive and democratic society. UNESCO, therefore, conceives vocational (and technical) education mainly for promoting economic development and employment through personal and social concerns.(Rashtriya, 2005, pp. 22 -24)

2.3 NEEDS OF TVET REFORM

The current formal TVET system lacks linkage to the labor market. The outputs of the TVET system do not meet the needs of the employers in at least three areas: (i) Insufficient number of qualified graduates, (ii) Irrelevant occupations where programs are offered, (iii) Insufficient competencies for employment and self-employment. The majority of TVET teachers lack methodology training and practical skills, and have no industrial experience. The formal TVET system provides limited opportunities to the primary target beneficiaries of the National Poverty Reduction Strategy. Successful completion of class (or grade) 8 is required for entry into formal TVET programs in the secondary school certificate (vocational) and thus excludes the majority of the poor. In order to address the shortcomings of the current TVET system, the Government of Bangladesh has decided to reform it and to introduce Competency Based Training (CBT). Initially the CBT is being implemented through the EU/ILO funded TVET Reform Project. Other two projects Skills Development Projects (SDP) and STEP (Skills Training for Enhanced Performance) are supporting this reform agenda as well. (TVET Reform, 2010, pp. 2-3)

A variety of studies by the Asia Development Bank, World Bank and others identified a number of weaknesses which the three big skills projects are intended to help overcome. Kashem, Chowdhury and Shears (2011) made the following points about the need for TVET reform in Bangladesh:

“Historically, the major road-block in the provision of skilled workers was an ineffective TVET system that was out of touch with the demands of industry. The reform agenda had to tackle:

- Identifying skills demand and matching with supply;

- Increasing number of TVET seats available which implies more investment;
- Enhancing capacity of TVET institutions to offer courses industry wanted;
- Providing better quality courses with credentials recognized nationally and internationally;
- Promoting higher profile for TVET and new qualifications;
- Finding qualified staff (combining technical and teaching skills);
- Establishing and strengthening the links between industry and TVET institutions. (Shears, 2011, p. 4).

2.4 CONCEPT & UNDERSTANDING OF COMPETENCY BASED TRAINING (CBT) IN TVET

Competency based training (CBT) places emphasis on what a person can do in the workplace as a result of completing a programme of training. The emphasis in CBT is on "performing" rather than just "knowing". A competency-based training system includes more than just training courses related to job performance. It identifies the level of competence required for different levels of performance within a given work function. For example, a competency-based training system for a large bank would identify competencies required for entry-level tellers vs. competencies required by managers of loan administrators. Looking at the competencies required for different job levels would allow employees to set professional development goals. For example, a teller whose career goal is to be a branch manager would work to develop the competencies required for that job. Developing competency-based training requires performing a job skills analysis. You must look at every job description in the organization and ask:

- What knowledge and skills are required to perform this job?
- What level of competence is required to perform this job?

Once competencies are defined, training can be organized to support performance at different levels - from entry-level to upper management. And, the level of competence required for performance can be established. Does the job require an employee to make decisions independently, or are all decisions made by a supervisor? The level of decision-making skills required in these two situations would be very different. When you set your sights on employee development, focus on competencies - not titles of training courses. Competency-based training can help you prioritize your training expenditure to achieve results.

CBT programmes are often comprised of modules broken into segments called learning outcomes. These modules are based on standards set by industry, and assessment is designed to ensure each student has achieved all module outcomes. Progress within a CBT programme is not based on time. When students complete the requirements in a module, they can move to the next module, therefore they may be able to complete a programme of study quickly. Some CBT programmes will only be available within fixed timeframes and some have on the job and outside the job components. As mentioned earlier, competency based training focuses on what the participant is expected to be able to do in the workplace as opposed to just having theoretical knowledge. An important characteristic of CBT is that it is focused not only on the actual jobs that are required in the workplace, but also the ability to transfer and apply skills, knowledge and attitudes to new situations and environments.

The definition of competency in the Australian context of competency based training includes four aspects of work performance. These are: (as quoted by Karim, 2011, pp.23-24)

1. **Task Skills** - Being able to perform individual tasks.
2. **Task Management Skills** - Being able to manage a number of different tasks within the job.
3. **Contingency Management Skills** - Being able to respond to irregularities and breakdowns and changes in routine.
4. **Environment Skills** - Being able to deal with the responsibilities and expectations of the work environment including working with others.

2.5 CHARACTERISTICS OF COMPETENCY-BASED TRAINING PROGRAMMES

According to (Karim, 2011, p.25) key characteristics are summarized below.

- Competencies are carefully selected.
- Supporting theory is integrated with skill practice. Essential knowledge is learned to support the performance of skills.
- Content of training are specifically related to the skills and abilities required to do a job.
- Detailed training materials are keyed to the competencies to be achieved and are designed to support the acquisition of knowledge and skills.
- Methods of instruction involve mastery learning, the premise that all participants can master the required knowledge or skill, provided sufficient time and appropriate training methods are used.
- Participants' knowledge and skills are assessed as they enter the programme and those with satisfactory knowledge and skills may bypass training or competencies already attained. Recognition to prior learning is given.
- Learning should be self-paced – time taken to master the competency is not a big factor.
- Flexible training approaches including large group methods, small group activities and individual study are essential components.
- A variety of support materials including print, audiovisual and simulations (models) keyed to the skills being mastered are used.

Satisfactory completion of training is based on achievement of all specified competencies.

2.6 ADVANTAGES AND LIMITATIONS OF CBT

One of the primary advantages of CBT is that the focus is on the success of each participant. Watson (1990) states that the competency-based approach “appears especially useful in training situations where trainees have to attain a small number of specific and job-related competencies”.

Benefits of CBT identified by Norton (1987) include:

- Participants will achieve competencies required in the performance of their jobs.
- Participants build confidence as they succeed in mastering specific competencies.
- Participants receive a transcript or list of the competencies they have achieved.
- Training time is used more efficiently and effectively as the trainer is a facilitator of learning as opposed to a provider of information.
- More training time is devoted to working with participants individually or in small groups as opposed to presenting lectures.
- More training time is devoted to evaluating each participant’s ability to perform essential job skills.

While there are a number of advantages of competency-based training, there also are some potential limitations. Prior to implementing CBT, it is important to consider these limitations:

- Unless initial training and follow-up assistance is provided for the trainers, there is a tendency to “teach as we were taught” and CBT trainers quickly slip back into the role of the traditional teacher.
- As long as specific tasks can be identified and agreed upon by those who know the occupations, a list of competencies can be determined and appropriate learning materials can be assembled. The success of CBT depends on the degree to which agreement can be reached regarding relevant tasks. A CBT course is only as effective as the process used to identify the competencies. When little or no attention is given to identification of the essential job skills, then the resulting training course is likely to be ineffective.
- A course may be classified as competency-based, but unless specific CBT materials and training approaches (e.g., learning guides, checklists and coaching) are designed to be used as part of a CBT approach, it is unlikely that the resulting course will be truly competency-based.

Norton (1987) believes that participants in a competency-based training course should learn in an environment that duplicates or simulates the work place. Richards (1985) in writing about performance testing indicates that assessment of skills requires tests using simulations (e.g., models and role plays) or work samples (i.e., performing actual tasks under controlled conditions in either a laboratory or a job setting). Finally, Delker (1990) in a study of business and industry found that the best approach for training involved learner-centered instruction using print, instructional technology and simulations. (As quoted by karim, 2011, pp.27-28)

2.7 CBT IN BANGLADESH

As mentioned earlier, lots of preliminary activities are going on for the introduction of CBT in Bangladesh. Two separate projects are running side by side with cooperation among themselves. The projects are – (i) TVET Reform Project funded by the European Union and executed by the ILO (project period 2008-2012) and (ii) Skill Development Project funded by Asian Development Bank (project period: 2008-2013). There is close coordination between these two projects. Most of the papers to be presented in this seminar will be by the experts working or associated with EC-ILO project. Hence the participants are expected to know details about the activities of this project from them. Some relevant information on Skill Development Project is given below:

Key Outputs of the Skill Development Project:

- 5, 000 teachers will be trained.
- 100 CBT standards will be developed.
- 70 modular courses will be developed.
- 91 training centers will be strengthened.
- 68,000 trained youths will be in employable skills.
- Medium-term Research and Development Plan.
- 10-year TVET Development Plan. (karim,2011,p. 28)

2.8 CHARACTERISTICS THAT DISTINGUISH BETWEEN COMPETENCY-BASED AND TRADITIONAL PROGRAMME

Characteristic	Competency-based programmes	Traditional programmes
1. What Students Learn	1. Are based solely on specific, precisely stated student outcomes (usually called competencies or tasks) that have been recently verified as being essential for successful employment in the occupation for which the student is being trained. These competencies are made available in all concerned and describe exactly what the student will be able to do upon completing the training programme.	1. Are usually based on textbooks, reference material, course outlines or other sources removed from the occupation itself, Students rarely know exactly what they will learn in each successive part of the programme. The programme is usually around chapters, units, blocks and other segments that have little meaning within the occupation - instructors focus on "covering material."
2. How Students Learn	2. Provide trainees with high quality, carefully designed, student-centred learning activities, media and materials designed to help them master each task. Materials are organized so that each individual trainee can stop, slow down, speed up or repeat instruction as needed to learn effectively. An integral part of this instruction is periodic feedback throughout the learning process with opportunities for trainees to correct their performance as they go.	2. Rely primarily on the instructor to personally deliver most of the instruction through live demonstrations, lectures, discussions and other instructor-centred learning activities. Students have little control over the pace of instruction. Usually, little periodic feedback on progress is given.
3. When Students proceed from Task to Task	3. Provide each trainee with enough time (within reason) to fully master one task before being allowed or forced to move on to the next.	3. Usually require a group of students to spend the same amount of time on each unit of instruction. The group then moves on to the next unit after a fixed amount of time which may be too soon or not soon enough for many individual trainees.
4. If Students Learn each Tasks	4. Require each individual trainee to perform each task to a high level of proficiency in a job like setting before receiving credit for attaining each task. Performance is compared to a preset, fixed standard.	4. Rely heavily on paper and pencil tests and each student's performance is usually compared to the group norm. Students are allowed (and usually forced) to move on to the next unit after only marginally mastering or even "failing" the current unit.

Table 6: Characteristics that distinguish between competency-based and traditional programme
(Source: karim, 2011, pp. 22-23)

2.9 NATIONAL TECHNICAL AND VOCATIONAL QUALIFICATIONS FRAMEWORK (NTVQF) IN BANGLADESH

The NTVQF comprises six levels of qualifications from Certificate 1 to Certificate 5 and then Diploma. They are intended to replace the three level National Skill Standards introduced decades back but which never really took hold. These NTVQF levels are similar to those in NVQ frameworks in other countries. Indeed, the BTEB over time will negotiate with other jurisdictions to have their NTVQF formally recognized and aligned with the frameworks in these countries.

An interesting feature is the inclusion of two pre-vocational levels in order to provide a pathway for those who do not have the formal educational requirements for an NTVQF programme. See Figure 2. A more detailed version of the NTVQF is provided as Annex 1 to this paper. It should also be noted that there are other pathways for those who do not have Grade 8 so they can gain entry to TVET. (Shears, 2011, pp. 8-9)

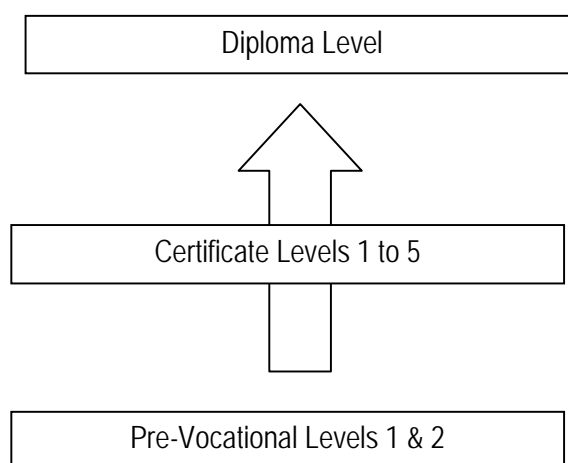


Figure 2: Simplified Representation of NTVQF in Bangladesh

2.10 DEVELOPMENT OF COMPETENCY BASED TRAINING IN BANGLADESH

A major difference between CBT and traditional training is the major role industry plays in identifying the competencies needed by skilled workers that should be included in any training programme designed to produce those workers. This input starts with the identification of priority occupations and continues with the elaboration of units of competence often referred to as competency standards. These units are then packaged into certificates at levels 1 to 5 on the new NTVQF. The Standards and Curriculum Development Committee (SCDC) is comprised mainly of industry members who make sure the competencies described are current and relevant to industry. They also sign off on the course accreditation documents which outline the training program and contain information such as units covered, assessment strategies, equipment and facilities required, qualifications of instructors, entry requirements and similar information. The

course accreditation documents are then used as the basis for developing competency based learning and assessment materials which comprise information sheets, task sheets, job sheets and various forms of assessment documents. Trainees will be trained for and assessed against the competencies identified in the standards. (Shears, 2011, pp. 7-8)

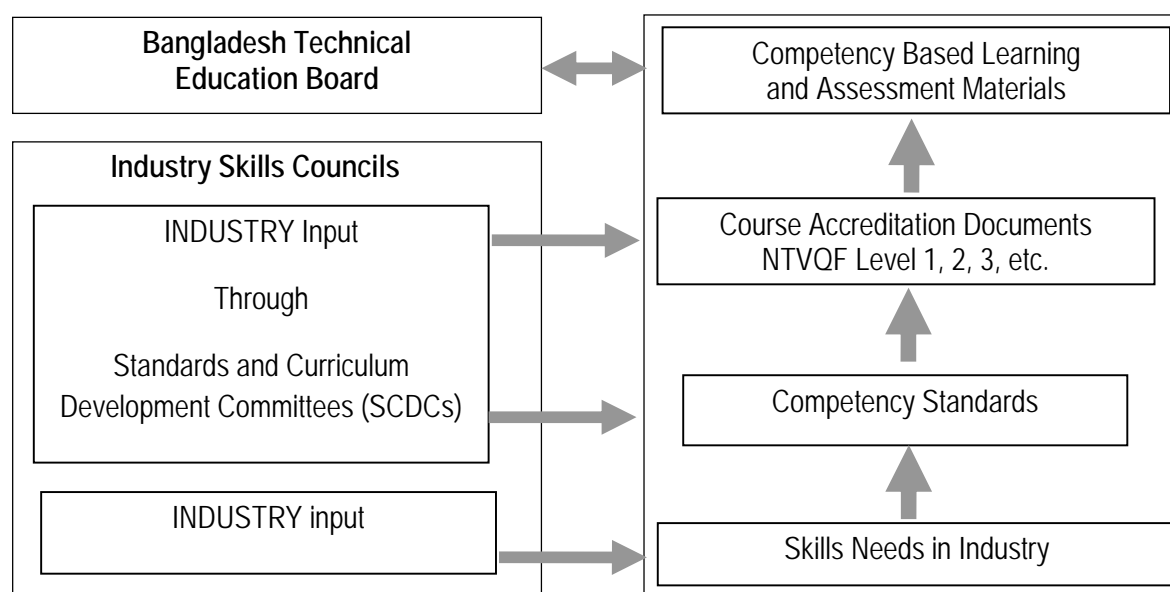


Figure 3: Process for development of competency based training. (Source: Shears, 2011, p. 8)

2.11 ON-GOING CHALLENGES

Coordination among projects including in-the-pipeline projects – During 2011, the Additional Secretary (Development), Ministry of Education who was also Co-Chair of the TVET Reform PSC held a couple of coordination meetings among the three skills projects. These meetings served to focus on activities which were overlapping and in some cases duplicating others. One positive result was the effort made by the SDP and TVET-R projects to look at how their respective programmes for TVET instructors could be consolidated. This type of coordination meeting has continued under the aegis of the NSDC Secretariat this time with a focus on skills data collection activities and support available for the ISCs. The Government is considering a request from the G-20 group of industrialized nations to become a pilot country for promoting enhanced cooperation among donor supported skills development projects.

The donors also need to continue to liaise on issues concerning skills development using the Skills Working Group (SWG) of the Education Local Consultative Group (ELCG). This inter-agency coordination and dialogue is especially important now because there are several new potential TVET players in the wings including Department for International Development (DFID), Canadian International Development Agency (CIDA), Australian Aid (AUSAID), and GIZ (Germany). Further, the ADB is preparing a proposal for an additional skills development project.

Making ISCs sustainable – The existing eight ISCs need to be expanded so they are more representative of the various members of their sector. It is important to note the financial support that STEP is able to provide to the ISCs. This will supplement in the medium term the support provided to the ISCs by the TVET reform project in the form of training and equipment for the national skills data system and planned national skills survey; short term training for its members in response to training needs, and fellowships for key members to neighboring countries. Two of the existing ISCs established Centres of Excellence to be a one stop service centre for their members in sector training, research and consulting. These two centers are nascent but it is expected that with the funding from various sources that these COEs and others will blossom. Naturally, any organization cannot depend on outside funding forever so the development of sustainable business plans is a priority.

Strengthening links with industry – The establishment of the ISCs is a good start. Strengthening the current ISCs and developing new ones to cover all the industry sectors in the country is critical. The re-launch of the NSDC is an important forum for business and key suggestions for skills development from the Better Business Forum were incorporated into new Skills Policy. Industry representatives have helped fashion new skills competency standards, identified key occupational shortages and approved new NTVQF qualifications. As the new TVET programmes are introduced industry will have the opportunity to bring trainees into their operations on job attachments and help forge quality workers. Meantime, training initiatives focusing on “on-job” training such as apprenticeship and short course, in-house training need to be promoted more widely tapping into existing alliances with agencies like BEF and FBCCI. The proposed Skills Development Fund would not only engage industry by providing funds for skills training but also encourage them to provide training in-house or link to government or non-government training providers for contracted training.

Increasing government capacity in managing/delivering TVET – The staff of the relevant departments involved with skills development such as the DTE, BMET and BTEB are engaged with the delivery of their traditional programmes. The TVET sector as a whole suffers from inadequate numbers of instructors with some statistics suggested a shortfall of close to fifty percent. The government agencies have submitted requests for the hiring of instructors for which posts already exist. The BTEB in particular also has shortages and given its essential role in the reform process it is critical for it to be able to hire necessary staff. Already the BTEB has developed a new organizational structure to be able to implement the changes needed for

competency based training and assessment, the new NTVQF and the BQAF. A request for close to 90 new staff has been presented to the Ministry of Education for clearance. It takes a considerable time to hire such staff through the formal public sector system and in the meantime the BTEB has agreed to hire persons directly on a contractual basis. Not only does this provide an effective vehicle to fill immediate needs but it also allows persons with recent industry experience to be hired.

Another positive development is the delivery of capacity development workshops by the TVET reform project in cooperation with UNESCO. This series of eight, four to five day workshops is targeted at middle to senior managers in Ministries/agencies involved in technical training as well as from private sector training agencies. They introduce managers to the use of statistical data for decision making and converting policies into practice.

Adopting reform recommendations – A considerable number of persons were consulted during the preparation of the National Skills Development Policy and the Policy itself was subject to inter-ministerial consultations and some months on a government website for additional public feedback. A number of the reforms from the Policy are embedded in the activities of the TVET reform project. Reforms such as the introduction of competency based training and assessment; the implementation of the NTVQF and the BQAF; TVET financing and others need to be advanced. Key persons in the project stakeholder organizations were identified to be focal points for discussing and following through on recommendations. Committees such as the Task Force on Programme Trials are engaged in the oversight of the new CBT programmes and troubleshooting issues that come up. The Skills Policy recommends the establishment of a management committee for each TVET institution comprising both institution and private sector members. These proposed institution management committees need to have their terms of reference defined, members recruited, and recognition given by the relevant authorities.

The Project Steering Committee of the TVET reform project comprises members from government, the private sector, and non-government organizations and they can take issues up to the next level.

The NSDC as apex skills body has already requested the EC-NSDC and its Secretariat to develop an implementation plan for the National Skills Development Policy. The TVET reform project is providing assistance to the Secretariat until it is fully operational. Funding is available from the STEP to support the NSDC and ISCs.

Promoting TVET as a viable career choice – In Bangladesh as in many other countries, TVET is considered a less desirable option for students and their parents who are deciding on career choices. Efforts are underway to improve the image of TVET by linking training more closely with improved employment opportunities, better salaries, and more highly regarded TVET qualifications nested in the NTVQF. The SDP has organized campaigns to popularize TVET among women and the TVET reform project has commissioned a series of newspaper articles,

videos and posters outlining some of the features of the reformed TVET system. More social marketing needs to be done to popularize institution based programmes as well as new or renewed programmes such as CB-TrEE, apprenticeship, and recognition of prior learning. In the latter case targeted promotional campaigns among businesses are needed. This is where partnerships with the ISCs and organizations like the Bangladesh Employers Federation (BEF) and Chambers of Commerce and Industry come into play.

The Size of the Challenge – TVET institutions on their own will never be able to come close to satisfying the demand for skilled workers. The majorities of persons trained in Bangladesh have been and always will be trained at the home/workplace. Creative ways to respond to this need

- Government TVET institutions currently train less than 200,000 tradespersons each year.
- MOLE says they want 5m trained each year. This is a realistic need.
- The working-age population in Bangladesh will be double current numbers in 2024
- Most TVET institutions currently have only about half their requirement of teachers.
- Most workers have gained their skills in the workplace/home, and will continue to do so.
- As the working-age population increases and the competitiveness of neighbor economies grows, Bangladesh must take bold action to improve productivity, skills and quality or the economy will slip further behind.

have to be found.

Linkages to Promote Success

The TVET reform project is a key element in the ILO's Decent Work Country Programme (DWCP). The well established partnerships between the ILO, government, private sector and worker groups are important in the on-going success and sustainability of the TVET reform agenda.

The project's major government stakeholders have already been mentioned – Directorate of Technical Education (Ministry of Education, Govt. of Bangladesh); Bureau for Manpower Employment and Training (Ministry of Overseas Employment and Expatriate Welfare) and the Bangladesh Technical Education Board. As the National Skills Development Policy comes to the fore more government Ministries which run training centres will become engaged with new curricula, adopting the new programmes for TVET teachers and managers and similar changes. The NSDC will be promoting reform.

The SDP and STEP projects will continue after the TVET reform project finishes and they are tasked with continuing and expanding the innovations. In addition, there are a number of smaller

TVET projects already underway such as SKILFUL which can be linked to the new NTVQF and BQAF. New projects in skills development by DFID, AUSAID, CIDA and others can also be aligned with on-going system reform.

On the business side, the important role of the ISCs has already been mentioned. Increased involvement of the Bangladesh Employers Federation (BEF) and the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) is necessary in order to popularize new apprenticeship models, promote recognition of the NTVQF and the RPL scheme. Industry participation in managing TVET institutions, contributing to SCDCs and forecasting industry demand for skills continue to be important contributions.

Meanwhile, the National Coordinating Committee for Workers Education (NCCWE) has a member on the Industry Skills Councils, and participates in training workshops and fellowships to increase its capacity to promote workers education among its clientele.

Another key partner for TVET reform has been non-governmental organizations both local and international. For example, support was provided to UNICEF's Basic Education for Hard to Reach Urban Working Children (BEHTRUWC) project in their work with street children. Technical advice was provided in establishing several NGO-run technical training centres; instructor training was delivered as well as advice on apprenticeship and links to the NTVQF. In collaboration with another ILO project – the Urban Informal Economy (UIE) project and with UNICEF, a series of eight competency skills logbooks were developed and are used in both on- and off-job training. There are more than 10,000 NGOs operating in Bangladesh. A number of them are involved with vocational training of one sort or another and potentially they are important vehicles to promote innovations like CB-TrEE, apprenticeships in the informal sector and other reform agenda. (Shears, 2011, pp. 14-17)

2.12 CONCLUSION

In conclusion it can safely be said that no research work was done by earlier researchers like the present research topic. After reviewing the above documents the researcher became able to develop his ideas to prepare this research proposal and also to develop the tools for data collection. As the present research topic is related to 'Proposed Competency Based Training Programme' which is yet to be implemented in near future in Bangladesh.

So, it is expected that the findings of this study might be helpful for the Govt. of Bangladesh in taking necessary steps to implement the CBT in TVET institutions.

CHAPTER III

METHODOLOGY

3.0 INTRODUCTION

This chapter is related to the methodology of the study. It describes in detail about the five parts viz. research design, population and sample for the study, data collection instrument, data collection procedure, data analysis.

3.1 RESEARCH DESIGN

The study adopted a survey research design. The study area was the Technical and vocational training institute from Dhaka district. The researcher selected two Govt. Polytechnic Institute, two Non-Govt. Polytechnic Institute from all Govt. Polytechnic Institute and Non-Govt. Polytechnic Institute and two Govt. Vocational institute, two Non-Govt. Vocational institute from Govt. and Non-Govt. Vocational institute in Bangladesh.

Sample of selected institutes from different types are shown in the following flow chart:

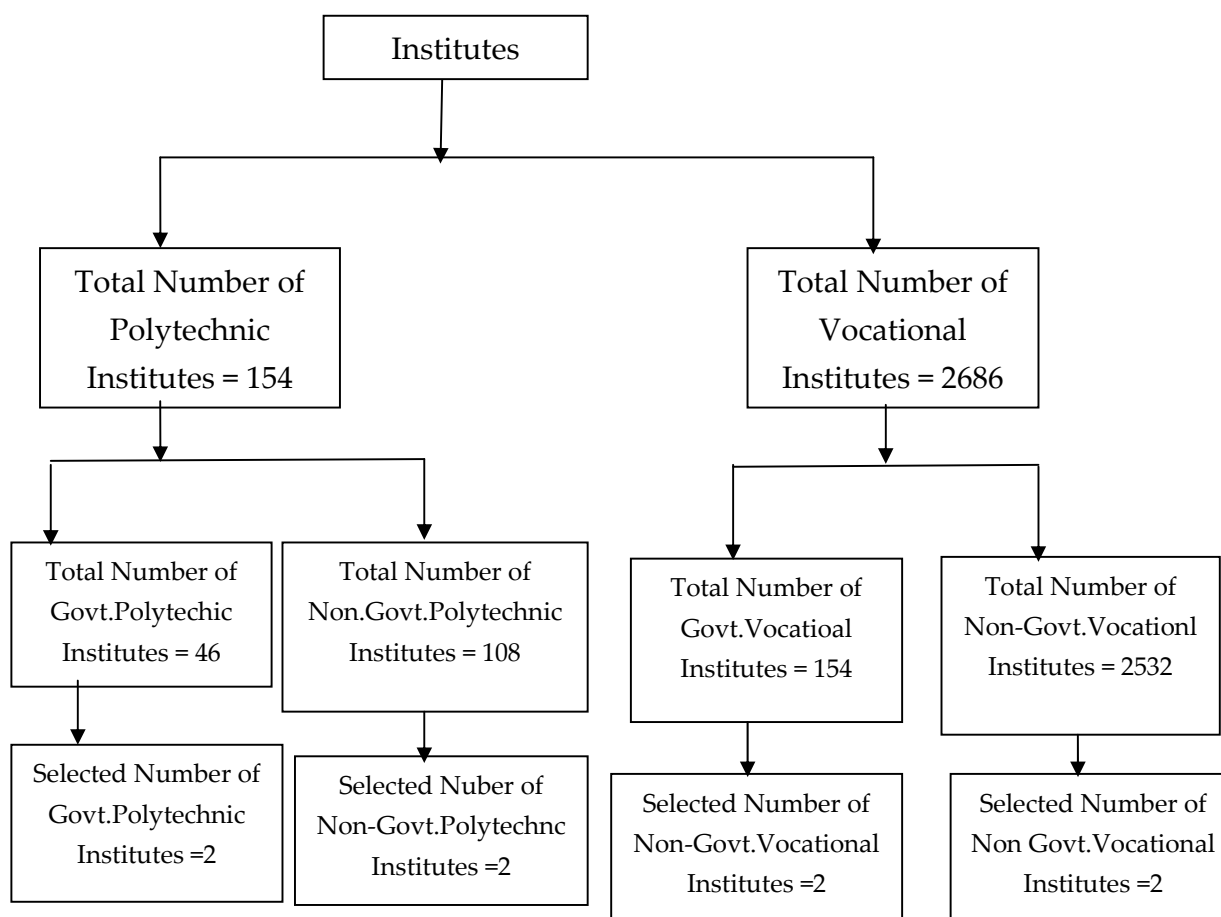


Figure 4: Showing the sample of selected institutes from different type's institutes in Bangladesh.

3.2 POPULATION AND SAMPLE FOR THE STUDY

The population for the study was all teachers of selected eight institutes. The total population was 695 teachers in the selected eight institutes.

The populations of the selected institutes were different types which have been shown in the following flow chart:

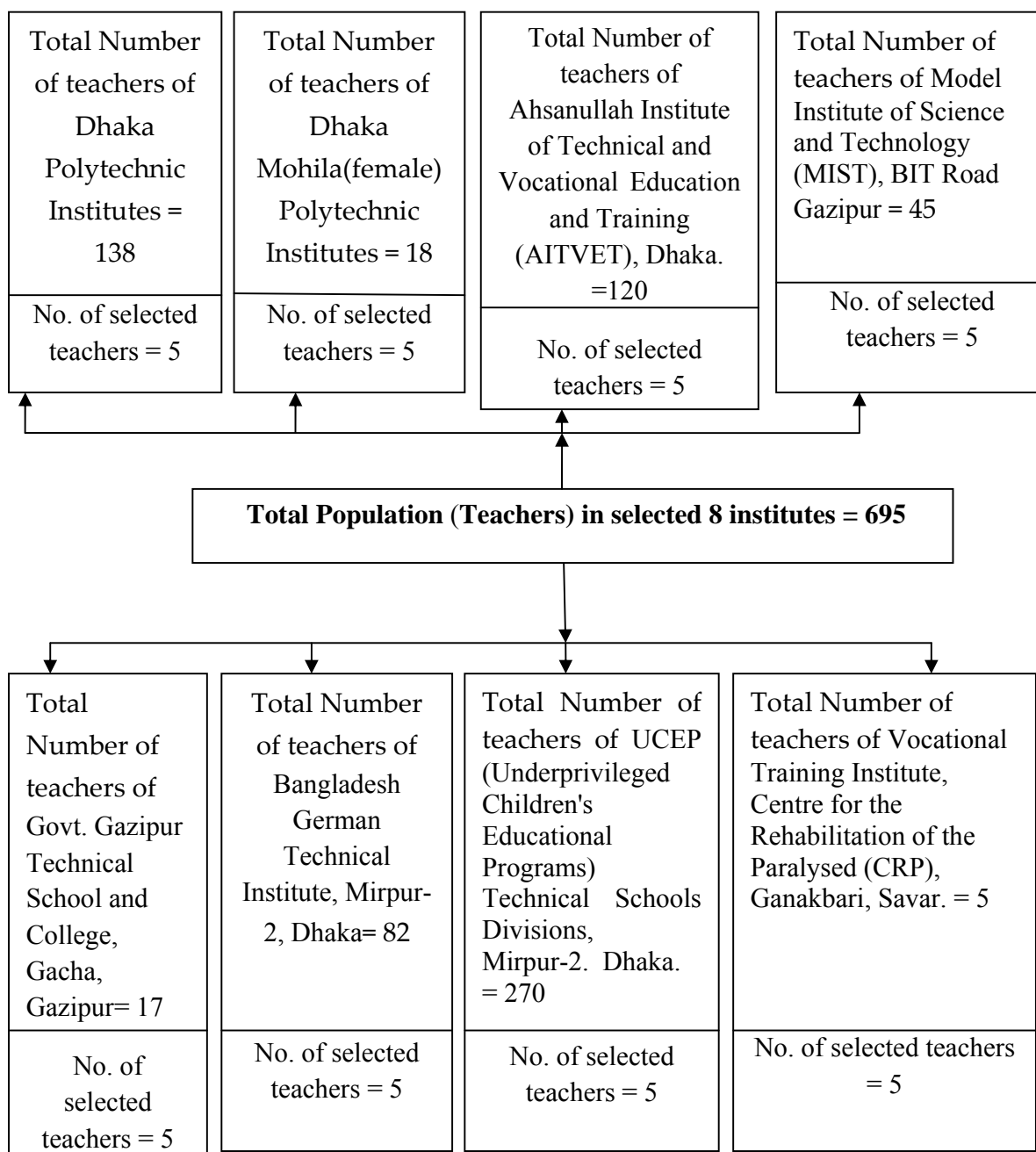


Figure 5: Showing the population of selected institutes from different type's institutes in Bangladesh.

Purposively five teachers were selected from each institute. In selection of the institutes and respondent teachers random purposive sampling technique was used. The total sample was 40 teachers (5 teachers from eight each institute).

The lists of selected institutes are given below:

Govt. Polytechnic Institute:

1. Dhaka Polytechnic Institute, Tejgaon, Dhaka.
2. Dhaka Mohila (female) Polytechnic Institute, Agargaon, Dhaka.

Non-Govt. Polytechnic Institute:

1. Ahsanullah Institute of Technical and Vocational Education and Training (AITVET), 20, West Testuri Bazar Road, Tejgaon, Dhaka.
2. Model Institute of Science and Technology (MIST), BIT Road Gazipur.

Govt. Vocational Institute:

1. Govt. Gazipur Technical School and College, Gacha, Gazipur.
2. Bangladesh German Technical Institute, Mirpur-2, Dhaka.

Non-Govt. Vocational Institute:

1. UCEP (Underprivileged Children's Educational Programs) Technical Schools Divisions, Mirpur-2, Dhaka.
2. Vocational Training Institute, Centre for the Rehabilitation of the Paralyzed (CRP), Ganakbari, Savar.

3.3 DATA COLLECTION INSTRUMENT

A questionnaire was the main instrument used for the collection of data for the study. One similar set of questionnaires containing 21 items were designed for the all respondents for the TVET (Technical and Vocational Education and Training) teachers. The questionnaire included structured close-ended and open-ended items. To survey the opinion of the selected respondents a five point Likert scale was developed.

3.4 DATA COLLECTION PROCEDURE

The researcher visited every selected institution for the data collection purpose and administered the questionnaire. The completed questionnaires were collected after filled up in the same day. This made it possible to record a 100 percent return.

3.5 DATA ANALYSIS TECHNIQUES

The Chi Square test and Likert type scale was used for data analysis. The SPSS 15.0 software was used for calculating Chi Square test value.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION:

This chapter presents the analysis and interpretation of data. The opinionnaire (see Appendix C), were designed structured close-end on a five point Likert scale of 5 is Strongly Agree, 4 is Agree, 3 is Undecided, 2 is Disagree, and 1 is Strongly Disagree. The respondents were asked to encircle one response that best describes your response to each of the statements.

Data were analyzed by using Chi Square in SPSS 15.0 and analyzed by using Chi Square test at significance level of 0.05. Calculated value of Chi Square is comparing with the critical value from the table at at significance level of 0.05 for finding null hypothesis were either accepted or rejected.

The weighted average(WA) is interpreted as $WA \geq 4.5$ is “Strongly Agree” and $4.5 > WA \geq 3.5$ is “Agree”, $3.5 > WA \geq 2.5$ is “Undecided”, $2.5 > WA \geq 1.5$ is “Disagree” and $WA < 1.5$ is “Strongly Disagree”.

4.2 CHI-SQUARE

Chi-square (pronounced “ky-square”) is a quantitative measure used to determine whether a relationship exists between two categorical variables. The Greek notation for chi-square is χ^2 , which can be used interchangeably with its Latin alphabet spelling; chi-square. Many statistics quantify the relationship between variables in some way.

Basic Chi Square (χ^2) Computational Equation:

$$\begin{aligned}\chi^2 &= \sum \frac{(\text{Observed frequencies} - \text{Expected frequencies})^2}{\text{Expected frequencies}} \\ &= \sum \frac{(F_o - F_e)^2}{F_e}\end{aligned}$$

Chi-square provides a quantitative measure of the relationship between two categorical variables, first, by determining what the distribution of observations (frequencies) would look like if *no* relationship existed and, second, by quantifying the extent to which the observed distribution. The frequencies associated with these rates when no relationship exists are called expected frequencies.

4.2.1 PURPOSE OF CHI SQUARE

The Chi Square (X^2) test is undoubtedly the most important and most used member of the nonparametric family of statistical tests. Chi Square is employed to test the difference between an actual sample and another hypothetical or previously established distribution such as that which may be expected due to chance or probability. Chi Square can also be used to test differences between two or more actual samples.

4.3 ANALYSIS OF THE DATA FOUND FROM RESPONDENTS WITH CHI SQUARE VALUE.

Administrative Problem:

The respondents express their opinion with the statement related to the problems of Administrative of TVET; the data which was found have been shown in Table-7.

Table 7: Response of Administrative Problem.

Total Sample (N) = 40

Statements in relation to Administration Problem.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square (X^2)
Poor administrative (DTE, BMET) support will be one of the barriers of implementing CBT in TVET programme in Bangladesh.	13	19	5	2	1	40	4.02	4	30.000
In administration (DTE, BMET) there will be a lack of well-trained manpower for monitoring and evaluating CBT.	11	23	3	2	1	40	4.02	4	43.000

(Key: SA = Strongly Agree (5), A= Agree (4), UND= Undecided (3), DA = Disagree (2), SDA= Strongly Disagree (1); df= Degree of freedom; WA = weighted average)

- For both statements given in Table-1 related to administrative problem the Chi square critical value at 0.05 levels is 9.48 with degree of freedom 4.

From Table-7 it can be seen that the calculated values of Chi square for both statements are greater than the critical value of 9.48, ($30.00 > 9.48$, $43.00 > 9.48$), thus the result is significant at 0.05 level. So, according to the respondents the administrative problem may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Competency Based Teachers Training Programme:

The respondents express their opinion with the statement related to the problems of Competency Based Teachers Training Programme, the data which was found have been shown in Table-8

Table 8: Response of Competency Based Teachers Training Programme.

Total Sample (N) = 40

Statements in relation to Competency Based Teacher's Training Programme.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square (X^2)
There will be a lack of Competency Based Teachers Training institute in Bangladesh.	21	14	2	2	1	40	4.30	4	40.750
Government should train up teachers firstly for developing the CBT programme in TVET institutions.	28	10	1	1	0	40	4.62	3	48.600
Most of the TVET institutes have CBT trainer teachers for implementing CBT programme.	9	8	6	13	4	40	3.12	4	5.750

- ***“There will be a lack of Competency Based Teachers Training institute in Bangladesh”*** of this statement given in Table-8 related to Competency Based Teachers Training Programme the Chi square critical value at 0.05 level is 9.48 with degree of freedom 4.

From Table-8 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 9.48, ($40.750 > 9.48$), thus the result is significant at 0.05 level.

- ***“Government should train up teachers firstly for developing the CBT programme in TVET institutions.”*** of this statement given in Table-8 related to Competency Based Teachers Training Programme the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-8 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 9.48, ($48.600 > 9.48$), thus the result is significant at 0.05 level.

- ***“Most of the TVET institutes have CBT trainer teachers for implementing CBT programme.”*** of this statement given in Table-2 related to Competency Based Teachers Training Programme the Chi square critical value at 0.05 level is 9.48 with degree of freedom 4.

From Table-8 it can be seen that the calculated values of Chi square for this statements is not greater than the critical value of 9.48, ($5.750 < 9.48$), thus the result is not significant at 0.05 levels.

So, according to the respondents the Competency Based Teachers Training Programme may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Design Competency Based Curriculum:

The respondents express their opinion with the statement related to the problems of Design Competency Based Curriculum; the data which was found have been shown in Table-9.

Table 9: Response of Design Competency Based Curriculum.

Total Sample (N) = 40

Statements in relation to Design Competency Based Curriculum.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Changing the traditional curriculum into CBT based curriculum will be one of the barriers of implementing CBT.	9	20	7	4	0	40	3.85	4	14.600
Separation of assessment centre from the training centre will be one of the barriers of implementing CBT.	4	19	10	6	1	40	3.47	4	24.250

- For both statements given in Table-9 related to Design Competency Based Curriculum the Chi square critical value at 0.05 levels are 9.48 with degree of freedom 4.

From Table-9 it can be seen that the calculated values of Chi square for both statements are greater than the critical value of 9.48, ($14.600 > 9.48$, $24.250 > 9.48$), thus the result is significant at 0.05 level.

So, according to the respondents the Design Competency Based Curriculum may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Public Awareness:

The respondents express their opinion with the statement related to the problems of Public Awareness; the data which was found have been shown in Table-10.

Table 10: Response of Public Awareness.

Total Sample (N) = 40

Statements in relation to Public Awareness.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
People should know about CBT.	20	15	2	2	1	40	4.27	4	39.250
People think, CBT is for technician level job.	7	21	10	1	1	40	3.8	3	19.400
People should know hands-on-experienced skilled workers are mostly demanded in job market in abroad.	28	10	2	0	0	40	4.65	2	26.600

- “People should know about CBT” of this statement given in Table-10 related to Public Awareness the Chi square critical value at 0.05 level is 9.48 with degree of freedom 4.

From Table-10 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 9.48, ($39.250 > 9.48$), thus the result is significant at 0.05 level.

- “People think, CBT is for technician level job” of this statement given in Table-10 related to Public Awareness the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-10 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 9.48, ($19.400 > 7.82$), thus the result is significant at 0.05 level.

- “People should know hands-on-experienced skilled workers are mostly demanded in job market in abroad.” of this statement given in Table-10 related to Public Awareness the Chi square critical value at 0.05 level is 5.99 with degree of freedom 2.

From Table-10 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 5.99, ($26.600 > 5.99$), thus the result is significant at 0.05 level.

So, according to the respondents the Public Awareness may be strong barriers for implementing the proposed CBT in TVET in Bangladesh.

Social Problem:

The respondents express their opinion with the statement related to the problems of Social; the data which was found have been shown in Table-11.

Table 11: Response of Social Problem.

Total Sample (N) = 40

Statements in relation to Social Problem.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Teachers show more interest to take theory class.	8	20	6	6	0	40	3.75	3	13.600
Teachers have the attitude that demonstration will be done by lab instructor only.	6	20	5	9	0	40	3.57	3	14.200
Teachers think technician field work less respectable.	5	15	5	14	1	40	3.22	4	19.000

- “Teachers show more interest to take theory class.” of this statement given in Table-11 related to Social Problem the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-11 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 7.82, ($13.600 > 7.82$), thus the result is significant at 0.05 level.

- “Teachers have the attitude that demonstration will be done by lab instructor only.” of this statement given in Table-11 related to Social Problem the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-11 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 7.82, ($14.200 > 7.82$), thus the result is significant at 0.05 level.

- “Teachers think technician field work less respectable.” of this statement given in Table-11 related to Social Problem the Chi square critical value at 0.05 level is 9.48 with degree of freedom 4.

From Table-11 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 9.48, ($19.000 > 9.48$), thus the result is significant at 0.05 level.

So, according to the respondents the Social Problem may be strong barriers for implementing the proposed CBT in TVET in Bangladesh.

Industry-institution linkage:

The respondents express their opinion with the statement related to the problems of Industry-institution linkage; the data which was found have been shown in Table-12.

Table 12: Response of Industry-institution linkage.

Total Sample (N) = 40

Statements in relation to Industry-institution linkage.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Industries do not show enough interest in establishing linkage between industry and institution.	10	24	2	4	0	40	4.00	3	29.600
Institutions do not show enough interest in establishing linkage between industry and institution.	7	18	8	6	1	40	3.60	4	19.250

- “Industries do not show enough interest in establishing linkage between industry and institution.” of this statement given in Table-12 related to Industry-institution linkage the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-12 it can be seen that the calculated values of Chi square for this statements are greater than the critical value of 7.82, ($29.600 > 7.82$), thus the result is significant at 0.05 level.

- “Institutions do not show enough interest in establishing linkage between industry and institution.” of this statement given in Table-12 related to Industry-institution linkage the Chi square critical value at 0.05 level is 9.48 with degree of freedom 4.

From Table-12 it can be seen that the calculated values of Chi square for this statements are greater than the critical value of 9.48, ($19.250 > 9.48$), thus the result is significant at 0.05 level.

So, according to the respondents the Industry-institution linkage may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Laboratory facilities:

The respondents express their opinion with the statement related to the problems of Laboratory facilities, the data which was found have been shown in Table-13.

Table 13: Response of Laboratory facilities.

Total Sample (N) = 40

Statements in relation to Labarotary facilities.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Lack of required equipment in laboratory in TVET institute.	18	17	3	2	0	40	4.27	3	22.600
Lack of skill worker to maintain laboratory equipment in TVET institute.	20	12	4	4	0	40	4.20	3	17.600

- For both statements given in Table-13 related to Laboratory facilities the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-13 it can be seen that the calculated values of Chi square for both statements are greater than the critical value of 7.82, ($22.600 > 7.82$, $17.600 > 7.82$), thus the result is significant at 0.05 level.

So, according to the respondents the Laboratory facilities may be strong barriers for implementing the proposed CBT in TVET in Bangladesh.

Assessor Problem:

The respondents express their opinion with the statement related to the problems of Assessor; the data which was found have been shown in Table-14.

Table 14: Response of Assessor Problem.

Total Sample (N) = 40

Statement in relation to Assessor Problem.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Fully impartial assessors will not be available in TVET in Bangladesh.	10	17	5	8	0	40	3.72	3	7.800

- “Fully impartial assessors will not be available in TVET in Bangladesh.” of this statement given in Table-14 related to Assessor Problem the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-14 it can be seen that the calculated values of Chi square for this statement is not greater than the critical value of 7.82, ($7.800 < 7.82$), thus the result is not significant at 0.05 levels.

So, according to the respondents the Assessor Problem may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Political Issue:

The respondents express their opinion with the statement related to the problems of Political Issue; the data which was found have been shown in Table-15.

Table 15: Response of Political Issue.

Total Sample (N) = 40

Statement in relation to Political Issue.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Political influences will disturb to the job placement of the CBT people	9	15	6	9	1	40	3.55	4	13.000

- “Political influences will disturb to the job placement of the CBT people” of this statement given in Table-15 related to Political Issue the Chi square critical value at 0.05 level is 9.48 with degree of freedom 4.

From Table-15 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 9.48, ($13.000 > 9.48$), thus the result is significant at 0.05 level.

So, according to the respondents the Political Issue may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Bureaucratic Problem:

The respondents express their opinion with the statement related to the problems of Bureaucratic Problem; the data which was found have been shown in Table-16.

Table 16: Response of Bureaucratic Problem.

Total Sample (N) = 40

Statement in relation to Bureaucratic Problem.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Bureaucratic pressure will affect the TVET institute.	7	18	10	5	0	40	3.67	3	9.800

- “Bureaucratic pressure will affect the TVET institute. “ of this statement given in Table-16 related to Bureaucratic Problem the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-16 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 7.82, ($9.800 > 7.82$), thus the result is significant at 0.05 level.

So, according to the respondents the Bureaucratic Problem may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

Financial Problem:

The respondents express their opinion with the statement related to the problems of Financial Problem; the data which was found have been shown in Table-17.

Table 17: Response of Financial Problem.

Total Sample (N) = 40

Statement in relation to Financial Problem.	SA	A	UND	DA	SDA	TOTAL	WA	df	Chi-square
Deficiency of budget to run the CBT program.	13	22	3	2	0	40	4.15	3	29.600

- “Deficiency of budget to run the CBT program.” of this statement given in Table-17 related to Financial Problem the Chi square critical value at 0.05 level is 7.82 with degree of freedom 3.

From Table-17 it can be seen that the calculated values of Chi square for this statement is greater than the critical value of 7.82, ($29.600 > 7.82$), thus the result is significant at 0.05 level.

So, according to the respondents the Financial Problem may be a strong barrier for implementing the proposed CBT in TVET in Bangladesh.

CHAPTER V

SUMMARY, FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 SUMMARY

The research objectives were:

1. to identify the barriers of implementing and the TVET (Technical and vocational Education and Training) teachers opinion regarding the proposed competency based training programme which is now new in Bangladesh.

The researcher has visited selected institute without any problems and collected data more successfully.

Above all, the researcher has found huge interest among the TVET teachers in the Implementing the Proposed Competency Based Training Programme in TVET Institutions in Bangladesh.

5.2 FINDINGS

The Major findings of this study are:

1. This study revealed that lack of well trained people in the administration to implement the proposed CBT programme in TVET institutions in Bangladesh.
2. Lack of skilled people for proper monitoring and evaluating the proposed CBT programme.
3. Most of the TVET institutes have a lack of CBT trainer teachers for implementing CBT programme.
4. Developing CBT based curriculum for all the areas of TVET is a tremendous job for the concerning authority.
5. Separation of assessment centre from the training centre is another barrier as well. Because of well established assessment centre is available for evaluating the trainees' competency
6. Public awareness was important to know the CBT.
7. Social problems such as teachers have no or not enough interest to do work by hands in workshop. They think it is craft instructor/demonstrators' job.
8. Lack of modern laboratory facilities.

9. Problem of finding availability of impartial assessor.
10. Huge influence of political issues.
11. Bureaucratic pressure has effected to implement the CBT in TVET institutions.
12. Deficiency of financial budget.
13. No strong linkage between industry and institutions.

These findings were supported by at least 20 TVET managers, while the researcher interviewed with them.

5.3 RECOMMENDATIONS

On the basis of the major findings, the researcher recommends that

1. Government should train up administrative people for operating this CBT programme and to change the traditional curriculum design into CBT curriculum design.
2. Teacher trainer should be trained up in CBT in Technical Teachers' Training College, *Tejgaon, Dhaka (TTTC)* or *VOCATIONAL TEACHERS TRAINING INSTITUTE (VTTI) .BOGRA*. Institutions. Also IUT (OIC) TVE department should play important role in CBT programme.
3. Public awareness should be increased; particularly why CBT is the most important in job sector.
4. Social problems should be considered among the teachers and students also guardians to know the importance of hands on experience work in the world job market.
5. There should be strong linkage between industry and TVET institutions to assess the CBT.
6. Every TVET institutions should have modern laboratory equipment to train up students.
7. Assessors must be impartial so that without competency nobody should not get certificate.
8. Politics should not be affecting the training programme.
9. Bureaucratic pressure should be avoided.

10. Budget should be sufficient.

5.5 RECOMMENDATIONS FOR FURTHER RESEARCH

Further study can be done after the formal implementation of the CBT curriculum.

5.6 CONCLUSION

In order to produce quality TVET graduates in Bangladesh the current reform is highly appreciated. However to operate the CBT successfully necessary measures to eliminate or to reduce the above mentioned barriers.

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APPENDIX A: NTVQF MATRIX

TVQF LEVELS	EDUCATION SECTORS			Current Qualification Structure	Job Classification
	Pre-Vocation Education	Vocational Education	Technical Education		
TVQF 6			Diploma in Engineering or equivalent	4 Year Diploma	Middle Level Manager / Sub Assistant Engineer. etc.
TVQF 5		National Skill Certificate 5 (NSC 5)		NSS Master	Highly Skilled Worker / Supervisor
TVQF 4		National Skill Certificate 4 (NSC 4)		NSS 1 / HSC (Voc / BM) Year 11 & 12	Skilled Worker
TVQF 3		National Skill Certificate 3 (NSC3)		NSS 2 / SSC (Voc) Year 10	Semi-Skilled Worker
TVQF2		National Skill Certificate 2 (NSC 2)		NSS 3 / SSC (Voc) Year 9	Medium-Skilled Worker
TVQF 1		National Skill Certificate 1 (NSC 1)		NSS Basic / Basic Trade Course	Basic Skilled Worker
Pre-Voc 2	National Pre-Vocation Certificate NPVC 2			None	Pre-Vocation Trainee
Pre-Voc 1	National Pre-Vocation Certificate NPVC 1			None	Pre-Vocation Trainee

APPENDIX B : CHI SQUARE CRITICAL VALUE TABLE

df	p value											
	0.25	0.20	0.15	0.10	0.05	0.025	0.02	0.01	0.005	0.0025	0.001	0.0005
1	1.32	1.64	2.07	2.71	3.84	5.02	5.41	6.63	7.88	9.14	10.83	12.12
2	2.77	3.22	3.79	4.61	5.99	7.38	7.82	9.21	10.60	11.98	13.82	15.20
3	4.11	4.64	5.32	6.25	7.81	9.35	9.84	11.34	12.84	14.32	16.27	17.73
4	5.39	5.99	6.74	7.78	9.49	11.14	11.67	13.23	14.86	16.42	18.47	20.00
5	6.63	7.29	8.12	9.24	11.07	12.83	13.33	15.09	16.75	18.39	20.51	22.11
6	7.84	8.56	9.45	10.64	12.53	14.45	15.03	16.81	18.55	20.25	22.46	24.10
7	9.04	9.80	10.75	12.02	14.07	16.01	16.62	18.48	20.28	22.04	24.32	26.02
8	10.22	11.03	12.03	13.36	15.51	17.53	18.17	20.09	21.95	23.77	26.12	27.87
9	11.39	12.24	13.29	14.68	16.92	19.02	19.63	21.67	23.59	25.46	27.83	29.67
10	12.55	13.44	14.53	15.99	18.31	20.48	21.16	23.21	25.19	27.11	29.59	31.42
11	13.70	14.63	15.77	17.29	19.68	21.92	22.62	24.72	26.76	28.73	31.26	33.14
12	14.85	15.81	16.99	18.55	21.03	23.34	24.05	26.22	28.30	30.32	32.91	34.82
13	15.93	16.91	18.15	19.81	22.36	24.74	25.47	27.69	29.82	31.88	34.53	36.48
14	17.12	18.15	19.4	21.06	23.68	26.12	26.87	29.14	31.32	33.43	36.12	38.11
15	18.25	19.31	20.60	22.31	25.00	27.49	28.26	30.58	32.80	34.95	37.70	39.72
16	19.37	20.47	21.79	23.54	26.30	28.85	29.63	32.00	34.27	36.46	39.25	41.31
17	20.49	21.61	22.98	24.77	27.59	30.19	31.00	33.41	35.72	37.95	40.79	42.88
18	21.60	22.76	24.16	25.99	28.87	31.53	32.35	34.81	37.16	39.42	42.31	44.43
19	22.72	23.90	25.33	27.20	30.14	32.85	33.69	36.19	38.58	40.88	43.82	45.97
20	23.83	25.04	26.50	28.41	31.41	34.17	35.02	37.57	40.00	42.34	45.31	47.50
21	24.93	26.17	27.66	29.62	32.67	35.48	36.34	38.93	41.40	43.78	46.80	49.01
22	26.04	27.30	28.82	30.81	33.92	36.78	37.66	40.29	42.80	45.20	48.27	50.51
23	27.14	28.43	29.98	32.01	35.17	38.08	38.97	41.64	44.18	46.62	49.73	52.00
24	28.24	29.55	31.13	33.20	36.42	39.36	40.27	42.98	45.56	48.03	51.18	53.48
25	29.34	30.68	32.28	34.38	37.65	40.65	41.57	44.31	46.93	49.44	52.62	54.95
26	30.43	31.79	33.43	35.56	38.89	41.92	42.86	45.64	48.29	50.83	54.05	56.41
27	31.53	32.91	34.57	36.74	40.11	43.19	44.14	46.96	49.64	52.22	55.48	57.86
28	32.62	34.03	35.71	37.92	41.34	44.46	45.42	48.28	50.99	53.59	56.89	59.30
29	33.71	35.14	36.85	39.09	42.56	45.72	46.69	49.59	52.34	54.97	58.30	60.73
30	34.80	36.25	37.99	40.26	43.77	46.98	47.96	50.89	53.67	56.33	59.70	62.16
40	45.62	47.27	49.24	51.81	55.76	59.34	60.44	63.69	66.77	69.70	73.40	76.09
50	56.33	58.16	60.35	63.17	67.50	71.42	72.61	76.15	79.49	82.66	86.66	89.56
60	66.98	68.97	71.34	74.40	79.08	83.30	84.58	88.38	91.95	95.34	99.61	102.7
80	88.13	90.41	93.11	96.58	101.9	106.6	108.1	112.3	116.3	120.1	124.8	128.3
100	109.1	111.7	114.7	118.5	124.3	129.6	131.1	135.8	140.2	144.3	149.4	153.2

APPENDIX C: QUESTIONNAIRE SAMPLE

SECTION A:**Instructions for completing the questionnaire:**

Using the provided scale of **5 to 1**, where **5** means that you **strongly agree** and **1** means that you **strongly disagree**, please **encircle one response** that best describes your response to each of the following statements.

5 = Strongly Agree 4 = Agree 3 = Undecided 2= Disagree 1= Strongly Disagree

Statements in relation to Administration Problem.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Poor administrative (DTE, BMET) support will be one of the barriers of implementing CBT in TVET programme in Bangladesh.	5	4	3	2	1
In administration (DTE, BMET) there will be a lack of well-trained manpower for monitoring and evaluating CBT.	5	4	3	2	1

Statements in relation to Competency Based Teacher's Training Programme.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
There will be a lack of Competency Based Teachers Training institute in Bangladesh.	5	4	3	2	1
Government should train up teachers firstly for developing the CBT programme in TVET institutions.	5	4	3	2	1
Most of the TVET institutes have CBT trainer teachers for implementing CBT programme.	5	4	3	2	1

Statements in relation to Design Competency Based Curriculum.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Changing the traditional curriculum into CBT based curriculum will be one of the barriers of implementing CBT.	5	4	3	2	1
Separation of assessment centre from the training centre will be one of the barriers of implementing CBT.	5	4	3	2	1

Statements in relation to Public Awareness.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
People should know about CBT.	5	4	3	2	1
People think, CBT is for technician level job.	5	4	3	2	1
People should know hands-on-experienced skilled workers are mostly demanded in job market in abroad.	5	4	3	2	1

Statements in relation to Social Problem.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Teachers show more interest to take theory class.	5	4	3	2	1
Teachers have the attitude that demonstration will be done by lab instructor only.	5	4	3	2	1
Teachers think technician field work less respectable.	5	4	3	2	1

Statements in relation to Industry-institution linkage.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Industries do not show enough interest in establishing linkage between industry and institution.	5	4	3	2	1
Institutions do not show enough interest in establishing linkage between industry and institution.	5	4	3	2	1

Statements in relation to Laboratory facilities.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Lack of required equipment in laboratory in TVET institute.	5	4	3	2	1
Lack of skill worker to maintain laboratory equipment in TVET institute.	5	4	3	2	1

Statement in relation to Assessor Problem.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Fully impartial assessors will not be available in TVET in Bangladesh.	5	4	3	2	1

Statement in relation to Political Issue.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Political influences will disturb to the job placement of the CBT people	5	4	3	2	1

Statement in relation to Bureaucratic Problem.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Bureaucratic pressure will affect the TVET institute.	5	4	3	2	1

