

# Barriers of Implementing the Proposed Competency Based Training Programme in TVET Institutions in Bangladesh

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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 100 from the TVET professionals in Bangladesh. Data was collected from the selected from more than 50 TVET institutions in Bangladesh. Data was collected through questionnaire which was based on a five point Likert scale. Data was analyzed by using chi square test at 0.05 significant levels. The study revealed that poor administrative support, lack of CBT trained up teachers, Designing Competency Based Curriculum, Industry-institution linkage, Laboratory facilities, Teachers attitude, Lack of competent and fully impartial assessors, Bureaucratic pressure, Deficiency of budget, and 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.*

**Keywords:** Competency Based Training (CBT), Technical and Vocational Education and Training (TVET), Skills Development

## 1. Introduction

With time 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 has 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.

### 1.3. 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).

### 1.2. 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) (Shears, 2011, p.6).

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 (ibid.).

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 5 shows the Programmes Available at Polytechnic Level (ibid.).

Table 1: Numbers of Private and Government Training Institutes

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

(Source: Shears, 2011, p.6)

Table 2: Types of TVET Programmes Available

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

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"> <li>• Refrigeration &amp; Air Conditioning</li> <li>• General Electronics</li> <li>• Fish Culture &amp; Breeding</li> <li>• Welding &amp; Fabrication</li> <li>• Computer &amp; IT</li> <li>• Dress Making</li> <li>• Farm Machinery</li> <li>• General Electrical Works</li> <li>• Automotive</li> <li>• Poultry Rearing &amp; Farming</li> <li>• Civil Drafting with CAD</li> <li>• Machine Tools Operation</li> <li>• Building Maintenance</li> <li>• Wood Working/Carpentry</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigeration &amp; Air Conditioning</li> <li>• Electronic Control and Communication</li> <li>• Fish Culture &amp; Breeding</li> <li>• Welding &amp; Fabrication</li> <li>• Computer Operation &amp; Maintenance</li> <li>• Clothing &amp; Garments Finishing</li> <li>• Agro Machinery</li> <li>• Electrical Works &amp; Maintenance               <ul style="list-style-type: none"> <li>• Automobile</li> </ul> </li> <li>• Poultry Rearing &amp; Farming</li> <li>• Drafting and Civil</li> <li>• Machine Tools Operation &amp; Maintenance</li> <li>• Building Maintenance &amp; Construction</li> <li>• Industrial Wood Working</li> </ul>

Table 4: Basic Trade Courses (6 months Duration)

<ul style="list-style-type: none"> <li>• Agro based food</li> <li>• Audio-video System</li> <li>• Carpentry</li> <li>• Computer</li> <li>• Drafting Civil</li> <li>• Dress Making &amp; Tailoring</li> <li>• Farm Machinery</li> <li>• Food processing &amp; Preservation</li> </ul>	<ul style="list-style-type: none"> <li>• General Electrical Mechanics</li> <li>• Plumbing &amp; Pipe Fitting</li> <li>• Refrigeration &amp; Air-conditioning</li> <li>• General Mechanics</li> <li>• Machinist</li> <li>• Weaving</li> <li>• Welding, etc</li> </ul>
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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"> <li>• Civil Technology</li> <li>• Mechanical Technology</li> <li>• Electrical Technology</li> <li>• Electronics Technology</li> <li>• Computer Technology</li> <li>• Graphic Arts Technology</li> <li>• Glass Technology</li> <li>• Architecture Technology</li> <li>• Environment Technology</li> <li>• Garment Technology</li> <li>• Survey Technology</li> </ul>	<ul style="list-style-type: none"> <li>• Chemical Technology</li> <li>• Food Technology</li> <li>• Power Technology</li> <li>• Automobile Technology</li> <li>• Refrigeration &amp; Air Conditioning</li> <li>• Surveying Technology</li> <li>• Ceramic Technology</li> <li>• Mechatronic technology</li> <li>• Printing Technology</li> <li>• Mining technology</li> <li>• Marine Technology</li> </ul>
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#### 1.4 Significance of the Study

A few studies (Mia, 2010, pp. 45 – 48, Kashem et. Al, 2011; Shears, 2011) identified some of the major problems of implementing the CBT that include the *identification of specific skills and competences* at different levels for each occupation (occupational standards); *development of training standards (curricula); development of competency based learning materials (training materials); and the continuous review of them.* 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 (Mia, 2010, pp. 45 – 48).

Given that implementation will be a big task, interviews with members of the Pectoral 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 (ibid.).

The Government of the Bangladesh is trying to reduce poverty through reforms of technical and vocational education and training policies and systems. These policies are 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 proposed CBT there may be so many barriers other than those mentioned above. Identification of these barriers is the main concern of this study.

### **1.5 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. Progress within a CBT programme is not based on time. 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 (Karim, 2011, pp.23-24).

#### **1.5.1 Characteristics of Competency-Based Training Programmes**

According to (Karim, 2011, p.25; w.r.t. Foyster, 1990; Delker, 1990; and Norton, 1987) 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 is used.
- Satisfactory completion of training is based on achievement of all specified competencies.

## **2. Methodology**

The study adopted a survey research design. Among the population were 100 TVET professionals, including 50 principals and 50 TVET teachers, from more than 50 TVET Institutions in Bangladesh. Among the TVET Institutions most of them were Technical School and Colleges (TSCs) and Technical Training Centers (TTCs), others were from Polytechnics, including Govt. and Non-Govt. Polytechnic Institutes. In the selection of the respondents random purposive sampling technique was used.

#### **Data Collection Instrument**

A questionnaire was the main instrument used for the collection of data for the study. The questionnaire included 21 items. The items were structured and close-ended. The responses of the selected TVET professionals were taken on a five-point Likert scale.

#### **Data Collection Procedure**

A large part of the data were collected from the TVET managers when were undergoing a training course at Islamic University of Technology (IUT), Dhaka. For the rest, the researchers visited the institutions and administered the questionnaire. After filling the questionnaire by the respondents the researchers themselves collected those completed questionnaire on the same day. This made it possible to record a 100 percent return.

### 3. Results

Data analysis was carried out using the Chi-square test with the significance level of 0.05. Calculated value of Chi-square was compared with the critical value at significance level of 0.05 for finding whether null hypothesis was either accepted or rejected.

The study was carried out in different sub-areas of the TVET system, namely: Administrative Problem, Teachers' Training, Designing Competency Based Curriculum, Industry-institution linkage, Laboratory facilities, Teachers attitude, Lack of competent and fully impartial assessors, Bureaucratic pressure, Deficiency of budget, and Public Awareness.

In the sub-area of **Administrative Problem**, the respondents expressed their opinion about the following statements: "Poor administrative support will be one of the barriers of implementing the CBT&A programme in Bangladesh." "In administration there will be a lack of well-trained manpower for monitoring and evaluating CBT."

The calculated chi-square value for the above two statements were 30.00 and 43.00. In this case the Chi square critical value at 0.05 levels is 9.48 with degree of freedom 4. Therefore, 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 results are significant at 0.05 level. So, according to the respondents the administrative problem may be a strong barrier for implementing the proposed CBT programme in Bangladesh.

In the sub-area of **Teachers' Training**, there were three statements. They are: "There will be a lack of Competency Based Teachers' Training Institute in Bangladesh." "Government should train up sufficient teachers firstly for implementing the CBT programme in TVET institutions." "Most of the TVET institutes have CBT trained teachers for implementing CBT programme."

The respondents expressed their opinion with these statements and the calculated Chi-square values were 40.75, 48.60 and 5.75, respectively. It can be seen that the calculated values of Chi-square for the first two statements are greater than the critical value of 9.48 for the  $df = 4$  and 7.82 with degree of freedom 3, ( $40.750 > 9.48$  and  $48.60 > 7.82$ ), thus the respondents agrees with the first two statements at

significant at 0.05 level. The calculated value of Chi-square for the third statement was 5.75 and it is not greater than the critical value of 9.48, ( $5.750 < 9.48$ ), thus the result is not significant at 0.05 levels. That means *most of the TVET institutes have not enough CBT trained teachers for implementing CBT programme*. In summary, it can be stated that, according to the respondents the lack of trained teachers is a strong barrier for implementing the proposed CBT programme in Bangladesh.

In the sub-area of **Designing Competency Based Curriculum** the following two statements were presented to the respondents to express their opinions: "Changing the traditional curriculum into CBT based curriculum will be one of the barriers of implementing CBT." and "Separation of assessment centre from the training centre will be one of the barriers of implementing CBT." The respondents came up with their responses and 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 results are significant at 0.05 level. Therefore, according to the respondents the huge work involved with Designing Competency Based Curriculum and the Separation of the Assessment Centers from the training centers will be strong barriers for implementing the proposed CBT in TVET in Bangladesh.

In the sub area of **Industry-institution linkage**, the respondents express their opinion with two statements. The first statement was "Industries do not show enough interest in establishing the linkage with TVET institutions." About 80% of the respondents were (strongly) agreed. The second statement was "Institutions do not show enough interest in establishing linkage between industry and institution." and 63% of the respondent supported the statement. The calculated Chi-square values of the responses for the above two statements were 29.60 and 19.25, respectively. These calculated Chi-square values for these statements are greater than the critical value of 7.82, ( $29.600 > 7.82$ ) and 9.48, respectively. Thus the results are significant at 0.05 levels. Therefore, according to the respondents the poor industry-institution linkage may be a strong

barrier for implementing the proposed CBT in Bangladesh.

**In the sub-area of Laboratory facilities** the respondents opined on the statements “There is a lack of required equipment in laboratories in TVET institutes.” and “There is insufficient skilled workers to maintain laboratory equipment in TVET institutions.” Above 80% of the respondents were agreed with the preceding two statements. The calculated Chi-square values for the statements were significant. Therefore, the insufficient lab facilities may be the barriers for implementing the proposed CBT.

In order to survey **teachers’ attitude** the opinion of the respondents were collected through the following three statements: “TVET Teachers show more interest to take theory class.” “TVET Teachers have the attitude that demonstration will be done by lab instructor only.” and “Teachers think technical/vocational or field work is less respectable.” About 62.0% participants agreed with these statements in an average. Calculated Chi-square values (13.6, 14.2, and 19.0) for the responses show that the participants’ opinions over the above statements were significant at 0.05.

Therefore, the teachers’ attitude may be a significant barrier for implementing the proposed CBT in TVET in Bangladesh, according to the survey findings.

In the same way the authors found other barriers for implementing the CBT in Bangladesh. The following are significant among others: Lack of competent and fully impartial assessors (67% agreed or strongly agreed), Bureaucratic pressure (62.5% (strongly) agreed, Chi-square value 9.80 > critical value 7.82), Deficiency of budget (87.5%, (strongly) agreed, Chi-square value 29.60 > critical value 7.82) and Public Awareness (84.2 agreed), and Political Issues (60% agreed, Chi-square value 13.0 > critical value 9.48).

#### 4. Discussion

In this study we identified several barriers of implementing proposed Competency Based Training programme which is now new in Bangladesh based on the survey conducted with TVET professionals in Bangladesh.

The government with the donor agencies has been providing TVET teachers, managers and administrators with training on CBT&A. While surveying the researchers found that the TVET professional are very much interested in implementing the Proposed Competency Based Training Programme in TVET Institutions in Bangladesh. However, they are in doubt if this program will be successful because of potential barriers mentioned above.

The authors do not think that these reform initiatives will not success. But joint effort must be paid by all the potential stakeholders in order to successfully implement the proposed CBT by overcoming the barriers.

#### 5. Recommendations

On the basis of the findings, the authors recommend that

1. Government should train up administrative people for operating this CBT programme.
2. Sufficient number of teacher trainers, for example teachers of Technical Teachers' Training College (TTTC), Vocational Teachers Training Institute (VTTI) and the teachers in the Department of Technical and Vocational Education of Islamic University of Technology, along with some other qualified teachers from TVET Institutions, should be trained up to train huge number of TVET teachers.
3. Public awareness should be increased; particularly why CBT is important for enhancing employment opportunity.
4. Teachers’ attitude should be changed towards performing practical tasks and parents of trainees should be made aware of the importance of hands on experience or work.
5. Job market requirements should be scanned regularly to improve the linkage between industries and TVET institutions.

6. Every TVET institutions should have enough laboratory/workshop equipment.
7. Assessors must be impartial so that none would get certificate without acquiring the required competences for his/her occupation.
8. Politics should not be affecting the training programme.
9. Bureaucratic pressure should be avoided.
10. Sufficient budget should be allocated.

## 6. Conclusion

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

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