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TVET Teachers in Bangladesh; Issues, Challenges and Priorities

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This paper acknowledged the roles of TVET teachers as agent of change considering rapid change in job market requirements, ICT revolution and sustainable development as the principal drivers of change in the national and global context. For an effective TVET system, role of teachers is very crucial, because this is the only living input that is responsible to manipulate other inputs. This paper identifies actual situation of TVET teachers in terms of their delivery process, working environment, training and development process, etc. Furthermore, performance of teachers training institutes and other interventions for staff development in terms of their functional capacity, proficiency, adequacy and relevancy of training is also presented. Identification of emerging issues, challenges and priorities in the global and national contexts is also covered; those have a tremendous impact on TVET system. The author conducted research on ongoing TVET teachers' training programmes and included his practical observation for assessing the performance of teachers training and development in Bangladesh. One of the major findings is that the TVET in Bangladesh is running with a huge crisis in quantitative aspect and a very poor and traditional approach is still prevailing in training learning practices. At the end, this paper focused on the growing concern of shortage of well qualified teachers and recommends giving priority in improving teachers' quality and quantity to transform TVET system as the master key of national sustainable development process.

Keywords: *TVET, TVET Teachers, Vocational Education and Training.*

Background

In the present era of twenty first century a critical challenge that is faced by every society is to attain growth in employment and sustain economic growth in the global economy. To meet these global challenges every developing country gives emphasis on Technical and Vocational Education and Training (TVET) as it has been considered as a tool for creating knowledge, skills and attitudes in the workforce of the country. The effectiveness of TVET in producing skilled workforce is evident by many researchers and organizations. As the Second International TVE Conference concluded, "We have considered the emerging challenges of the 21st century, a century that will be an era of knowledge, information and communication. Globalization and the revolution in information and communication technology have signalled the need for a new human centred development paradigm. We have concluded that TVE as an integral component of lifelong learning has a crucial role to play in this new era as an effective tool to realize the objectives of culture of peace, environmentally sound sustainable development, social cohesion and international citizenship" (UNESCO, 1999, Final Report, Second International Conference on TVE, UNESCO p.61). That is why TVET is considered as the master key for ensuring sustainable development of any developing country.

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Afghanistan	Pakistan	India	Nepal	Bangladesh	Srilanka
65%	28%	33%	20%	47% Bangladesh	7.8%

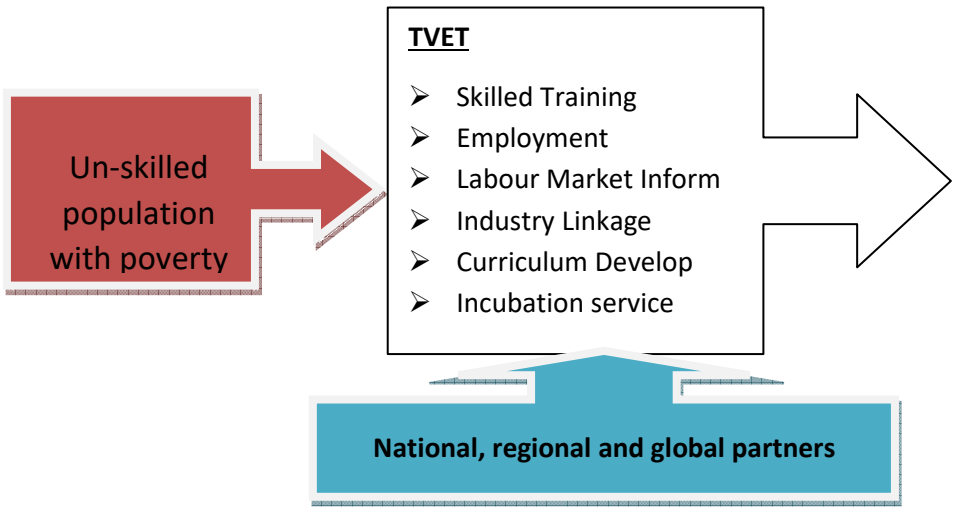
For every developing country, estimated unemployment graduate is another crucial issue. On estimated graduate unemployment Bangladesh stands behind seven countries in South Asia after Afghanistan (Figure-1),

The unemployment rate rises with the level of education. This keeps labour productivity low. For youth who are better educated unemployment rates are linked to lack of technical skills. There is a need for better quality education, English (communication) skills, on-the-job training as well as better job formation. However Youth unemployment and underemployment is especially pressing in South Asia, where there exists a demographic dividend poised to support the region's continued growth. Here TVET can play a very effective role to transform educated unemployment through transforming job focus skills and make a significant improvement in labour productivity.

Skilled manpower and Human Capital

According to the demographic dividend and dependency ratio of population analysis, the least dependency ratio will be occur in 2030 and Bangladesh will have the highest number of working age population (120 millions) in hundred years from 1950 to 2050. In this momentum Bangladesh can capitalize highest number of working age population against its dependent population and this is an opportunity for any country to boost up its human resources, hence it is considered as the “Window of Opportunity”. Bangladesh must utilize this window of opportunity through transforming this 120 millions of working age population into skilled workforce and make this country as a human power house and accelerate social and economic growth of the country. TVET can play here as the key player for developing human resources for ensuring sustainable development and social inclusiveness of Bangladesh. A model for human resource development through TVET is shown in chart 2. To cope up this development strategy government of Bangladesh has given emphasis to enhanced capacity of TVET; mentioned that TVET will play a vital role to build skilled Bangladesh through skilled manpower.

Figure-1
Human Resource Development Model of TVET

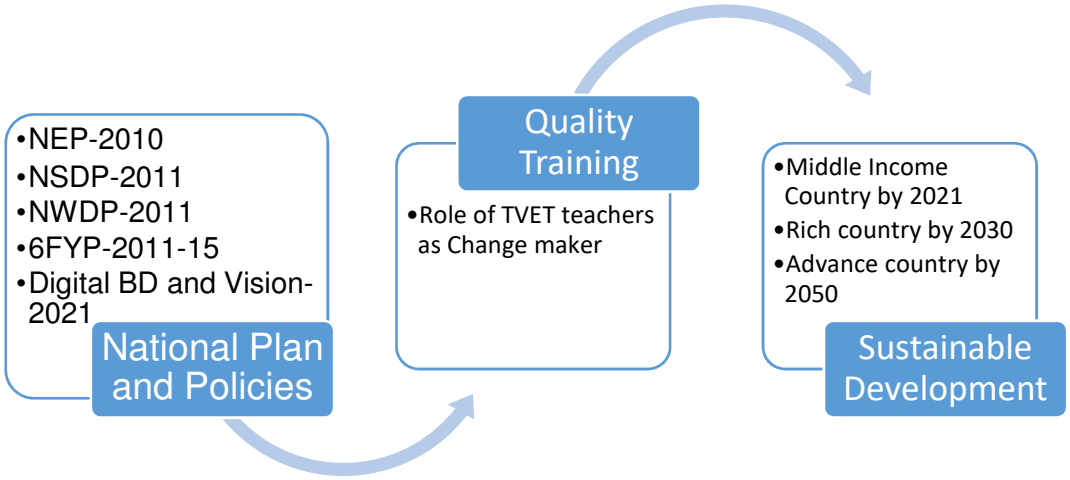


As we recognized the importance of TVET for changing any country's economy as well as ensuring sustainable development than the role of TVET teacher is very crucial and must be considered as agent of change to transform students or trainees or youth (Resources) from unskilled (Raw forms) to skilled (Product) form. Thus the quality of TVET is greatly depends on teachers/ trainers, managers and supporting staff etc. Experts, researchers, policy makers from all over the world recognized teachers as agent of change for preparing the next generation through strategic interventions in developing relevant teachers' education and training programs. (Figure-2)

Recognizes the growing concern of qualitative and quantitative aspect of TVET teachers, GOB has established many new structures and organizations to meet this target. National Skills Development Council (NSDC) has been established chaired by honorable Prime Minister and coordination of about 30 ministry and agency who are the key players of TVET and Skills development in Bangladesh. This paper present with all significant information which lead to develop a strategy for preparing highly competent TVET teachers for ensuring producing of world class TVET graduates.

Figure-2

GOB Plan and Policies and Role of TVET Teacher as Change Maker



TVET and Skills Development Program: Where We Stand Now?

Bangladesh TVET system and skills development program running with three major streams; formal, non-formal and informal. For formal TVET programs gross Enrolment Capacity in the TVET in the age group of 13-18 was found about 0.5 million in 2012. It covers 2.2% of secondary age group of enrolled students under TVET institutions of secondary and post-secondary education. Out of this 2.2% post-secondary level diploma courses covers 25%, Higher secondary level 34%, Secondary level 40% and remaining 1% by Basic trade level of 360 hrs duration and trainees are after eight years schooling. The non-formal TVET or skills providers' enrolment size was about 0.7 million in 2012 recognizable by NTVQF. The combined enrolment size of formal and non-formal program was about 1.2 million in 2013 which is 4.4% of the age group. According to BBS LFS 2010 about 6.8 million workforces were employed in the formal sector and about 47.2 million were employed in the informal sector. Out of these informal sector's workforce 87% are acquired some form of skills of the jobs they were occupying and they acquired these skills while working on the job. These employed workforces in the formal and informal sector along with the large number of migrant workforce from Bangladesh without any skills training have the right to acquire NTVQF through RPL. This huge task must bear by the TVET subsector and the whole nation as a whole.

The formal TVET system is comprises with three major area; Basic, Certificate and Diploma in Engineering. Certificate level TVET programs are mainly SSC (Vocational), HSC (Vocational, HSC (Business Management). All these certificate programs are two years duration and equivalency set with the main stream of education. Pass outs are getting opportunities to get admission in the higher level of education. Four-year diploma-level courses are offered through polytechnic and mono-technique institutions. Diploma and certificate level programs are offering through both public and private TVET institutions. Among all 291 public TVET institutions, 141are in operation under the ministry of education, 38 Technical Training Centres (TTC) are operating under the ministry of expatriates' welfare while the ministry of textile operates 10 technical vocational institutes (TVI). Agricultural Training Institutes (ATI) and Institute of Forestry is also in operation. Main stream TVET institutes are accredited by the Bangladesh Technical Education Board (BTEB) which is the main agency for providing course accreditation & certification. However, Youth development Centres, under the ministry of Youth and Sports, offeringdifferent courses following their own curriculum and certification. Formal TVET governance and main functions are performed by the Ministry of Education. To establish a better coordination among all skills and TVET providers National Skills Development Council (NSDC) has been established and at present it is the apex body chaired by honourable Prime Minister coordinating about 30 ministry and agencies who are directly or indirectly providing TVET or skills development programs.

Growing Trend: Bangladesh formal TVET enrolment has been expanding significantly in the recent past of the last two decades. In July 2012 the number of TVET institution is 6420 (BTEB Annual Report 2011-12) which is about 50% growth over the last four years.

Table-1

Expanding Trend of TVET Institute under BTEB (2008 to 2013)

Institute	2008	2009	2010	2011	2012	2013(Up to June'2013
Public	289	289	290	290	290	291
Private	4074	4339	5019	5752	6297	6573
Total	4363	4628	5309	6042	6587	6864

The apparent combined success rate of all BTEB affiliated formal TVET courses in 2011 was 80.5% as out of 266640 candidates appeared in the exam 214711 come out successful. Actual success rate would 48% if it is calculated as per seat capacity. It is also mentionable that in Bangladesh most of the education and training programs success rate is calculating through number of pass out by the number of appeared in assessment or exam. The system does not consider the drop outs and seat capacity allowed by the institutions. Considering the holistic approach of calculating success rate recent findings shows that the average passed was 78%, in which public TVET institutions passed rate is 89%, MPO 73%, Non-MPO 88%, and NGO 100%. The average pass rate of male student found 78% whereas female student rate was 77% in the SSC VOC exam in 2013. When considering this examinees admission in class nine than the progress rate stood at 52% and if consider the seat number of the respective institute this success rate come down at only 38%. This is the real picture of success rate of TVET program and a serious question may rise for this unusual wastage due to failure of the students and unused seats pose challenges for TVET system as a whole.

To get a comprehensive picture about the quality and strength of TVET sub sector it is better to know about the resources allocation for this master key tool of the sustainable development of the country.

The share of GDO to education sector in 2012 was 2.3% and share of TVET was only 1.4% of the education sector which is in terms of GDP was only 0.032%. These situations ask our self where we are. As in our constitution article 17 stated that "The state shall adopt effective measures for relating education to the needs of society and producing properly trained and motivated citizen to serve those needs" As it is mentioned earlier that TVET is highly recognized for transforming human resources in to human capital for enrichment of the country's economy and social development. So funding to TVET should be incorporate with the political commitment of the government, social needs and aspiration of the people and faster economic growth in the competitive global economy.

TVET Teachers; an Over View

In formal TVET system, there are three types of teachers in public TVET institutes i.e. permanent or revenue staff, development or project staff and staff in transition. In private TVET institutes there are four types of TVET management; government financed TVET institutes where teachers are fully appointed and salaried by government, the second category of TVET teachers are appointed and salaried by the private TVET providers or edupreneurs. The third categories of TVET teachers are appointed and salaried by the self-financednon-profit organizations. The last and fourth categories of TVET teachers are appointed and salaried by the local authority as their temporary need basis. These types of teachers are mostly enrolled in the basic trade level of TVET. In a recent survey (conducted by the Institute of Science, Trade and Technology ISTT, 2009) it is found that only 32% teachers are permanent and they receive all the opportunities stipulated for the teachers in their own organization. On contrary, remaining 68% of the teachers are either project staff or waiting to be transferred to revenue budget or working continuously on the desire of appointing authority. The impermanent teachers missed many opportunities; salary increment, promotion facilities and they did not enjoy all the leave stipulated opportunities. They consider their job as unsecured.

Teachers' Type

TVET institutes are comprises with two broad categories of teachers; one of them are technical teachers and another are non-technical teachers. Technical teachers are recruited as per their own technology background like Civil, Electrical, and Mechanical etc. and conduct their teaching learning process on the same discipline. Non-technical teachers usually taught general subjects like Physics, Chemistry and Mathematics etc. Both in polytechnic and Technical School and College (TSC) are of same pattern of teachers from junior instructor to the chief instructors and then vice principal to principal for polytechnic institute and principal for TSC. Both type of institute the top position is principal.

Growing Concern for Quantitative Challenges

Bangladesh TVET system is running with a huge number of shortages in teachers post that impact on the whole training quality and on output i.e. the quality of graduates. In a recent study conducted on polytechnic teacher's position in 2012 and found that out of 2067 post 1100 post (53%) is filled up. It means 967 posts are vacant (47%). The situation of Technical School and College (TSC) is more waste than that of polytechnic Institute where no teachers are recruiting till 2004. This situation is making paramount crisis in the whole system and nothing is simple to explain but crucial to solve. However a brief picture of present TVET institute with teachers' size is shown in the table 2. As per the BANBEIS report 2013.

Table-2

Number of TVET Teachers in Different Types of TVET Institutions, Source: BANBEIS report-2013

#	Category of Institute	Number of Institute	Number of Teachers	Female Teacher	%Female Teacher	Number of Students

1	Professional	447	8185	1521		113910
2	Technical Vocational	3766	27073	5439		182662
3	Polytechnic Institute	270	3819	479		151333
4	Technical School & College	166	2245	417		64920
5	Glass and Ceramic Institute	1	13	3		868
6	Graphics Arts Institute	1	14	4		685
7	Survey Institute	4	56	7		1247
8	Technical Training Centre	81	1299	215		26846
9	Textile Institute	33	520	65		11368
10	Textile Vocational	50	345	81		5848
11	Agriculture Training Institute	109	960	191		29493
12	Marine Technology	1	52	5		916
13	SSC(VOC) Independent	169	1976	399		24426
14	HSC(VOC)/BM Independent	584	5626	1241		105370
15	SSC(VOC) Attached	1432	5698	1318		127045
	Total	7114	49696	11385	19%	846937

Teachers Required in Formal TVET System to Meet the Target by 2030

According to the UNESCO GMR 2011 TVET enrollment in Bangladesh was only 2.2% and this is the lowest among seven countries about 31% of India, 5% of Australia, Malaysia, Indonesia and Japan. The enrollment size in secondary education was 50.2% (General education-41%, Madrasha 7% and TVET 2.2%). As per the findings of National Skills Survey 2012, 0.7million students were enrolled in non-formal and 0.5 million in formal trend both together 1.2 million equivalent 4% of the age group in 2012. As per the study report of Capacity Strengthening of TVET Sub-Sector Analysis 2013 TVET formal and Non-formal enrollment should be 1.575 million by 2015 for 7% of age group, 3.78 million by 2020 for 15% of age group and 8.1 million by 2030 for 30% of the age group. If Bangladesh wants to utilize its human resources through TVET and transform it into human capital then it must reshape its formal non-formal and informal Training paradigm. It should be an integrated approach which has to be done by NSDC incorporate with all concern skills providers. But narrow the total picture of training size and calculate formal TVET size and interpret the TVET teachers size is shown in Table-3.

Table-3

TVET Teachers Projection from 2015 to 2030

Measuring Indicator	Present TVET Status	Projected Status as per National Target		
Year	2013	2015	2020	2030
Teachers Nos (Formal)	49696	83333	125000	416667
Enrollment (Age Group)	4%	7%	15%	30%
Enrollment Size	1.2 million	1.575 million	3.78 million	8.1 million
Formal TVET size	846936	1 million	1.5 million	5 million
Student Vs. teachers ratio	17:1	12:1	12:1	12:1
New recruitment required	-	33637	41667	291667

Qualitative Challenges

The quality of TVET system mostly depends on its human resources. Any educational system has three major components; input, process and output where success or failure is mostly depends on its input quality and process of the system. Input of education system identified by students, curriculum, training materials, equipment etc. and process of the system is represent by the teaching learning process. The role of teachers is very significant in determining the desired output or the result as they are playing as an actor in the implementation process.

In Bangladesh TVET system is now confronting many challenges in terms of huge shortage of teachers, teacher's skills both on pedagogy and subjects and delivery process, training and development facilities etc. It is mentionable that the quality of any education is contextual, i.e. it is depend upon the norms and standard of the institution as well as of the country and other indicators prevailing in the system. But overall the roll of teachers is most important because this is the main living inputs and other inputs are utilizing by the teachers. If teachers' skill is poor the quality of TVET cannot assure though other inputs are satisfactory. If skilled teachers can set into the system than other shortcomings or deficiency can be minimize through this.

A report published by a resource team of the TVET reform Project and collaboration with the DTE and MOE April-November shows that Bangladesh TVET is running with a poor student instructor ratio. For NGO operated institution it is found 24, for Non-MPO institution it is 41, for MPO it is 39 and for that public TVET institution it is 47 while internationally recognized student teacher ratio at this stage is 12 (Table: 3). With this shortage of teachers let us see the teachers background which will reflect partly the delivery process and quality. (Table 4)

Table-4

Instructor Training and Experience

Post			Training on						Industrial Experience		Teaching Experience			
Types	Created	Filled %	Methodology Yes	No	Industry Yes	No	Ins Man Yes	No			0-5	6-10	11-15	16 above
Public	28	18(64)	-	18	-	18		18	1	17	-	17	1	-
MPO	255	200(78)	1	199	16	184		200	36	164	38	88	68	6
NMPO	72	51(71)	5	46	13	38		51	7	44	6	25	15	5
NGO	5	5(100)	-	5	-	5		5	3	2	3	2		-
Total	360	274(76)	6	268	29	245		274	47	227	47	132	84	11

Source: Capacity Strengthening on Preparation and Implementation of the Monitoring Plan in Bangladesh, DTE, MOE, April-November'2013

TVET Pedagogy

TVET pedagogy defines the entire field or arena that deals with broadly hands-on, vocational education and training. It should be based on the vocational educational principles, and is Practical orientation, problem-based orientation, collaborative learning. Exemplary learning explains social processes and structures out of single phenomena and makes the total context clear out of essential elements. Learning through experience/ Experience based learning. Experience orientation/ Learning by living through. Goal oriented, task orientated (holistic approach where science, technology, engineering and math (STEM) are integrated) and Value orientation. But unfortunately TVET pedagogy is not practicing and preferring properly. Taking Consideration of data from "Capacity Strengthening on Preparation and Implementation

of the Monitoring Plan in Bangladesh, DTE, MOE, April-November'2013" we can get a short picture on TVET pedagogy as well as the quality delivery of TVET in Bangladesh

- Only 2% of TVET teachers have training methodology, none got training on instructional management, only 11% has industrial training and 17% got industrial experience. Used of IT is significantly improving in public TVET institution but major part of private institution is very rare of using IT in their training delivery. The ongoing training for TVET teachers is basically subject skills and very poor portion is covering pedagogy which is very negligible. Most of the Private TVET institutions are not addressing in ongoing training programs.

- Institutional program for teachers training is almost at nonfunctioning stage. Authors conducted a little study on TTTC during the period of 2010 to 2013 and found training output is only 13% against the seat capacity. The TTTC is only specialized teachers training institute for preparing TVET teachers for polytechnic level, but for last one decade the institute is suffering many problem from the campus issue to operational and management issue. The other specialized and only teacher training institute is for vocational teachers are VTTI is almost dead for last 10 years from 203 to 2013. No training program of the regular courses was seen running at that period. Recent the institute conducting some short courses under project support but till it is not conducting any certificate course or specialized course. Another big problem found in VTTI is that the institute organogram is till linking with the polytechnic institute which need to review and must be reorganized with experienced vocational personnel.

World is Experiencing New Paradigm in TVET Teaching

A new TVET pedagogy has been emerged in TVET training learning activities in terms of Teachers activities approaches and learner's activities. The new paradigm of TVET pedagogy is presented in the Box

Past/Traditional Role of Teachers	New Role of Teachers
Work alone	Work in a team
Assign marks based on facts	Assesses based on development and result
Provide marks for declaring pass, fail and reward	Provide marks with guidance how far they are
Instruct the students and impart facts and knowledge	Advises students during their work on tasks and their solving of problems
Impart occupationally oriented theory	Impart occupationally oriented content of skilled work (subjects, tools, methods etc)
Develops teaching materials	Develops equipment concept and support
Develops knowledge with the aid of books. Seminars etc	Develops knowledge by continuous learning
New Roll of Learners will be	
From	To

Passive learner	Active learner
Reproducer of knowledge	Producer of knowledge
Dependent learner	Independent learner
Solitary learner	Collaborative learner

Considering the paradigm shift in present TVET pedagogy Bangladesh TVET system must reorient its teachers and reframed skills delivery system with the new global trend. TVET pedagogy should reflect art of teaching with all required area of competency which must possess by a TVET teacher. An effective TVET teacher requires the following four competencies to become a through full professional. These competencies are Subject skills, principles of teaching skills, attitudes and aptitudes of training, industrial exposures and soft skills. Through accommodate these entire elements a teacher can develop art of TVET teaching.

Considering Bangladesh context here some of the skills and training requirement is shown which can be followed by TVET teachers training program for all level in a TVET institution.

Table-5

Skills and Training Requirement of TVET Teachers and Managers

Level	Skills and Training Requirements
Principal	Institution Development /Building plan Strategic Planning Effective management and Leadership Human resource Management Project planning and Management M&E and performance appraisal Communication, Networking and Relationship Building Research/ Survey Methodology PPP Building and Industry relationship
Head of Department	Departmental Management Curriculum design and development Academic Planning and Management Effective management and Leadership Human resource Management M&E and performance appraisal Project planning and Management Networking and Relationship Building Research/ Survey Methodology Skills and subject updating Industrial relationship and networking
Instructor (All Level)	Educational Pedagogy Educational Technology Subject/skills updating Curriculum design and implementation Assessment and Evaluation

	Communication skills Industrial skills and exposures Skills on Norms and standard

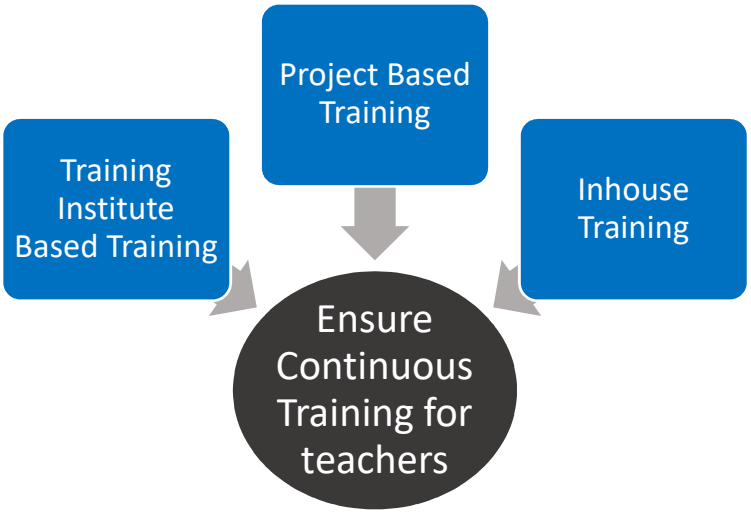
Developing TVET Teachers; Future Road Map

To meet the challenges both quantitative and qualitative aspects, Bangladesh TVET system must fulfilled with the following requirements with defined dimensions-

1. Authority of TVET teacher's recruitment should be reframed as per teachers occupational frame work of the BTEB. Projected Number of TVET teachers must recruited as per the job standard specifying job description, Job specification and personal specification incorporating with required training and experiences for each of the post.
2. TTTC and VTTI should start their regular training program immediately. DTE should take initiatives for starting these institutes and programmes. Recruitment rules of VTTI should be changed and vocational teachers should get illegibility for the VTTI post. (Policy level) Reform of management capacity should be done both for TTTC and VTTI basis on technology/trade implemented in the curriculum
3. Encouraging private university/providers for starting of teachers training programme. Allow and establish more TVET teachers training institutions and departments in Public Private University and teachers provided opportunities for qualifications at the Diploma, Advance Diploma, Graduation, Post-Graduation in Doctoral and Post-Doctoral level.
4. DTE can develop its all institutes (PI and TSC) with teachers training facilities with deploying a post of training coordinator. Integration can be developed among Institute based training; Project based training and in-house training. DTE can coordinate this training program and find the gap and take corrective measures.
5. Set up an individual and autonomous training organization which main role will be to look the training programme and find its obstacle and take corrective measures so that the problem can be solved and a continuity can be maintain in order to overcome the dead lock situation.
6. An individual "Teaching skills development programmes/project" can be design, Develop and implement in order to capacity Development of the teachers training programme for all level covering all TVET instructors at formal levels.

Figure-3

An Integrated Approach for Continuing Teachers Development Program



Conclusions

TVET teachers' training and development is an enormous task to meet up the targeted goal with the milestones of 2020 and 2030. Huge number of teachers should be recruited and thereby the present vacuum should be filled in order to run the system. On the other hand, training of teachers should be set at high priority in both governance and financial aspect. Many projects are being run for strengthening TVET in Bangladesh.

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