

# **Technical and Vocational Education and Training (TVET)**

## **Challenges and Priorities in Developing Countries**

### **TITLE**

**Technical and Vocational Education and Training (TVET) Challenges and Priorities in Developing Countries**

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### **ABSTRACT**

**The social and economic trends predicate the need for reforming the TVET Systems in different Developing Countries with a view to have a new development pattern which holds a culture of economically, environmentally and socially sustainable development.**

**Keywords: TVET Challenges and Priorities in Developing Countries**

### **1.0 BACKGROUND**

**The TVET in most of the Developing Countries is expected to play two crucial roles in the national sustainable development (social, economical & environmental development). The first role is to provide training opportunities and career advancement avenues for the increased school leavers. The second role is to provide skilled manpower that is needed at all levels of the economy. The skills so developed should be able to lead to self-reliance in the absence of salaried employment and enhance the industrialization process.**

**Although TVET has been used by several Developing Countries as an instrument of sustainable development, TVET has been still left to the periphery and its significance has not really been embraced.**

**On the other hand, Developing Countries have a relatively large percent of skilled yet unemployed people. This is as a result of declining employment in the public and private sector. Moreover, despite that Developing Countries have a large cheap unskilled labor force, as a result of lack of education and training, the core role of TVET in enhancing the informal sector and in offering skills and knowledge to the unskilled has not been keenly appreciated in most of the Developing Countries.**

**TVET administration in most of the Developing Countries is now increasingly being moved from the jurisdiction of the Ministries of Labor or Manpower Development to the Ministry of Industry and Ministry of Education and because of advancing aid harmonization in the Ministry of Education and Ministry of Industry, TVET has also come to be squarely cast within education and industrial sectors' development plans. In other words and by its very nature, the entirety of TVET does not fit within the frame of only one sector. In view of the learning and education element, the TVET has to be administratively within the jurisdiction**

of the Ministry of Education. In view of the powerful trends at work placing and the requirement for On-the-Job Training OJT and practical skilled workforce, the TVET should be also within the jurisdiction of the Ministry of Industry.

For a TVET System to be able to play its role effectively, it is important to ensure that there exists an enabling and TVET friendly environment nationwide. Such an enabling environment can be achieved by putting in place harmonized national TVET policies, provision of adequate funds, developing positive social attitudes towards training and enhanced management. The increased public funding will increase the subsidy among the poor households through loans and bursaries to needy trainees.

The governments and the private sector in different Developing Countries should above all recognize that TVET is an investment not a cost, with significant returns including the well being of workers, enhanced productivity, international competitiveness and economic growth in the long run.

Enhanced management in different Developing Countries should ensure that TVET is well co-ordinate. This will reduce wastage of resources; improve relevance and retention of training personnel in the country.

Managing TVET under various government departments in most of the Developing Countries has result the TVET sector to be stagnated and cause disparities in the training standards.

The current governmental plans in several Developing Countries such as Egypt, Tanzania, Liberia, Botswana, Zambia, South Africa, Kenya, Jordan and Syria have emphasized the development and promotion of TVET sector.

Traditionally TVET was regarded to be a provision reserved for the male gender in Developing Countries. This belief has resulted in serious omissions in national government development plans where women are given a raw deal. Consequently, most of the TVET facilities are planned without taking into consideration the female gender. Coupled with this cultural belief among most of the communities in Developing Countries, women are discouraged from enrolling for vocational career training opportunities. Enrolment data from TVET institutions indicate that very low percentage of the women's total enrolment is in Vocational areas within Developing Countries.

This paper is aiming to specify the challenges facing the TVET System reform and identify the basic concepts of improving the quality of TVET delivery, improving of training related affairs, delivering a TVET demand approach, assuring TVET institutional development, provision of capacity building instruments and transfer of training technology in Developing Countries.

This paper arises from practical observation that the significance of TVET in contributing to awareness, knowledge, skills and attitudes acquisition in Developing Countries is often ignored. Thus, the paper endeavors to discuss the current condition of TVET, in general, and underscore the importance of TVET in most of the Developing Countries today. The paper is also aiming to specify the challenges facing the TVET Reform Systems / Projects / Programmes, identify the basic concepts of improving the quality of TVET delivery, improving the training related affairs, delivering a TVET demand approach, assuring TVET institutional development, provision of capacity building instruments and transfer of training technology.

## **2.0 PROPOSED MODELS OR SOLUTIONS**

### **Introduction**

**In most Developing Countries, the TVET refers to non-academic technical education and practical training that develop the skills and knowledge of apprentices (learners of trades or crafts) working in different sectors of industry and trainees / students trained in different technical vocational institutes, centres and schools. The TVET is that part of the education system that provides courses and training programmes related to employment with a view to enable the transition from Secondary Education to work for young trainees / students (social objective) and supply the labor market with competent apprentices (economic objective).**

**The TVET is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of Knowledge, Practical Skills, and Attitudes relating to occupations in various sectors of economic and social life. The TVET is further understood to be:**

- a. An integral part of general education**
- b. A means of preparing for occupational fields for effective participation in the world of work**
- c. An aspect of continuing or lifelong learning and a preparation for responsible citizenship**
- d. An instrument for promoting environmentally sound sustainable development**
- e. A method of facilitating poverty alleviation.**

**The social and economic trends predicate the need for a new development pattern which holds a culture of economically, environmentally and socially sustainable development as its central features. Accordingly the values, attitudes, policies and practices of TVE in the Developing Countries must have their foundations in this pattern. Approaches and practices should be always sought for and presented to illustrate the contribution that TVET can make towards a more sustainable development.**

### **Challenges and Priorities**

**Considering the myriad problems facing Developing Countries, TVET is not only important, it is a prerequisite. We start by critically reviewing some of the problems and challenges facing the TVET and how TVET could be used to set priorities and alleviate these problems before embarking on suggestions on the way forward.**

**The basic TVET System Reform Challenges and Priorities in Developing Countries listed in this paper is:**

#### **A. Engaging Community as Significant Players in TVET**

**In order to develop a nation's economy and society in different Developing Countries, it is important to note, that in average two thirds of the population in most of the Developing Countries generally work in jobs that require a skill level which is usually associated with vocational education and training.**

**It has been always a challenge to change the mindset of parents, the community and stakeholders about vocational education being second choice to academic education. People tend to view TVET in a negative way, as education and training**

meant for those who have failed in the society. Most parents (even the ones with TVET background) want to see their children becoming engineers, doctors, lawyers, etc. just because they believe this will give them better job opportunities. This challenge is vital to development of TVET and it is apparently one of the major obstacles to improve the social status of TVET.

If students who received a vocational education routinely earned better incomes than those who choose the academic route, then parents would factor this in their decision making.

The challenge is to create vocational programmes in Developing Countries that deliver professionally successful graduates. When we rise to this challenge, the brightest students will be fighting for a place on TVET schemes.

In contrary to what is happening in Developing Countries, the employers and enterprises in most of the Developed Countries are queuing up to hire graduates of TVET programmes and there are more requests from employers and enterprises each year than there are graduates. This means graduates of TVET institutions in Developed Countries earn income better than graduates from other high institutions. This in turn means parents in Developed Countries are fighting to get their children into those TVET institutions – even though TVET institutions are normally considered to be a dead-end option for the least bright vs. regular institutions.

The high status / low status debate is perhaps a false one. If employers don't value TVET graduates then there's a more fundamental problem with these TVET institutions.

Another negative image of TVET in Developing Countries is the social class. A plumber can be making as much money as an engineer but at the end of the day, he is still a plumber with a lower social status. Money does not always equal higher social status. Apparently in some circles, a university degree is still the ticket to social mobility even if it does not lead to employment or more money. How do we change that perception so that parents use a different yardstick to measure their success as parents is an important issue? This is interesting question and part of the answer to the question is that better quality of TVET will lead to higher performance and productivity of TVET trained graduates and hence higher wages and more job chances.

#### **B. Systematic Professional Development of Instructors / Trainers / Teachers**

There are many challenges for TVET in Developing Countries in terms of systematic professional development of instructors / trainers / teachers demands. Instructors / trainers / teachers are posed with problems on how to use new technology and keep up with teaching methods of various vocational training. This topic is one of the most important issues when dealing with Quality Assurance of TVET as one of the major objectives for TVET Reforming in Developing Countries.

#### **C. Keeping Pace with Technological Advancements and Using Technology Appropriates in TVET**

There are many challenges for establishment of appropriate infrastructures, upgrading existing material and training resources available. There is need for proper tools, equipments to be used in vocational training and be used by instructors / trainers / teachers to keep up with the skills with changing times.

Developing Countries are still overly focused on science and technology-based curricula and training programmes but they need to spend as much effort on transformative critical pedagogy.

#### **D. Encouraging Continuing TVET and Lifelong Learning**

There is a challenge for putting in place a truly coherent and comprehensive continuing TVET and lifelong learning strategies in Developing Countries. Such strategies should be actively encouraged and actions at all levels of continuing TVET and lifelong learning should be developed

#### **E. Delivering a TVET Demand Approach**

Unfortunately many In-company Based and Outside-company Based TVET Institutions / Centers in Developing Countries are concentrating their efforts on “Curriculum Mandates” and “Training Programme Writing” without sufficient understanding of “Delivering a TVET Demand Approach”. TVET Institutions / Centers’ Instructors / teachers must take the time to fully appreciate and understand the practicalities of teaching and planning on the basis of a demand approach before engaging in lesson or unit writing.

Links between education and training and the employment sector should be improved through researching the needs and competences that are on demand or will be required in the future by the labor market. In this context, emphasis is to be given to the enhancement of the vocational training status and on establishing lifelong approaches, counseling and guidance to vocational training. A special interest should be given to training programmes that are promoting equal opportunities, thus enabling all to have access to the labor market.

The infrastructure and systems for TVET Institutions (Institutes, Centers and Schools) in Developing Countries and the skills delivered cannot be static. The market requirements are changing with such great pace that the TVET Institutions have to be constantly in re-construction. This is specially the case with training curricula, infrastructure, trainers’ skills, market linkages, etc. The outcome based approach in this regards seems to be the most appropriate. A TVET Institution should build its credibility by effectively training the candidates and contributing to a career development of the persons rather than act as an institution for rolling training programmes.

#### **F. Vocationalisation of Higher Education HE in Developing Countries**

Considering that workforce-development is one key-issue for the overall development of Developing Countries, it is necessary that the best brains, which usually gather in academic communities, also care for education and training at that intermediate level. There are not many Developing Countries, where “vocational disciplines” are implemented through respective academic subjects at universities. During the last few years some Developing Countries started to build up such university subjects.

Even though vocational disciplines are of such great importance to society, decision makers often are reluctant to the implementation of a high number of them because still, vocational disciplines are not regarded as full academic disciplines even in countries where they exist for a longer time. The academic communities fear to damage their high status if too many low quality subjects exist

at their universities. Therefore it might be wise, not to start with a too big number of vocational disciplines, which will have to build up their own profile and thus compete with already established academic disciplines.

The lack of appropriately trained TVET personnel in the Developing Countries and the rigid curriculum requirements of TVET courses and programmes generally limit the ability of training providers to accept sustainable vocational education as a valuable education. Therefore such barriers provide challenges for the TVET sector in Developing Countries that should be resolved and areas where Higher Education HE can contribute, should be identified.

There are some areas where HE and TVET could improve their collaboration in Developing Countries:

- 1) Contribution of HE sector towards re-development and interpretation of TVET Packages (Curriculum & Training Programmes)
- 2) Contribution of HE sector towards Training of TVET Trainers / Instructors / Teachers
- 3) Research and Shared Vision between HE & TVET in Contribution to Sustainable Development SD
- 4) Joint development of resources and pedagogy that promotes SD and encourages a culture of sustainability in TVET

Taking consideration of the above, the TVET in Developing Countries should develop close interfaces with HE and other education sectors to facilitate seamless pathways for learners with an emphasis on relevant work experience and allow learners to enter gainful employment or pursue HE opportunities.

#### **G. Funding of TVET**

Studies show that, in Developing Countries, funding towards TVET is ad hoc and arbitral, TVET Institutions have been neglected or overtaken by institutions concentrating on purely academic education without any practical training (On-the-Job Training OJT).

One major constraint that TVET is facing in Developing Countries, is the limited budget and this becomes the core issue as to why TVET Institutions are not able to employ trained trainers, assessors and verifiers, support them in updating and upgrading their skills, purchase most appropriate training facilities, aids and technology for practical training (On-the-Job Training OJT) and accordingly are not able to market themselves effectively, etc.

Application of the modern training methodologies implies budgets, which may not be constant along time. During the initial stage of establishing a TVET System / Project, costs are high because the design, development, edition and validation of the full Training and Assessment Matrix take time and effort and it is a costly project. Costs go down as the TVET Institutions / Enterprises appropriate the methodologies and the models become consolidated. Another peak in costs occurs when the training materials and facilities have to be reproduced / upgraded. This is even more critical when there are high rates of workers / trainees / students turnover.

How can TVET Institutions manage costs? Traditionally, they have utilized cost per hour of instruction plus support material and teaching aids. The system is no longer valid for application of this methodology. If emphasis lies on training, assessment and verification with the assistance of external assessors and verifiers, costs are concentrated at both ends of the training matrix process (training life cycle) i.e. in the development of curriculum and training materials and in the process of assessment, verification and feedback for each participant.

Terms of reference for the link-up between the TVET Institutions and the Enterprises vary according to the parts of the methodology to be applied. The TVET Institutions and the Enterprises must jointly determine what products are to be considered. One enterprise may want first to obtain a competencies' profile, another may wish to apply base line assessment guides immediately, a third one to start off with basic training. As opposed to traditional training, where the cost of supply (inputs) was taken into account, in modern training methodologies costs are related to the demand (results / deliverables / products).

TVET costs management is in no way obvious since many deliverables depend on the degree of worker / trainee / student involvement in the TVET project pathway. It would be too demanding to work only on deliverables when not all aspects of the process are under control. We may consider a halfway alternative, like paying for a number of hours of programmed training services, with the commitment of reaching certain levels of deliverables for each specified stage.

TVET Institutions can play an important role in the reproduction / upgrading of the training materials and facilities to reduce the costs by applying virtual learning. The TVET Institutions can also reduce costs by negotiating the reproduction / upgrading of training packages designed and developed for several enterprises at a time, and get better prices from end users. Again, it is an investment that enterprises are not accustomed to and which may sometimes cause disproportionate and irrational reactions by management. That is the moment when TVET Institutions can submit arguments justifying the investment and suggest alternative solutions.

While every reasonable effort should be made to reduce per capital cost, there is a minimum below which effective TVET cannot be given, and if the basic courses and training programmes do not permit of this minimum of per capita cost, TVET will not be effective. As international figure, any enterprise / company / organization spending less than 1-2% of their profit on TVET will not ensure the implementation of a robust and effective TVET System.

The introduction of some "quality-related" elements and "quality indicators" in TVET can contribute to additional costs. However, the long-term benefits for society and the economy are such that the initial costs related to the upgrading of quality are well-justified. Nevertheless, high-quality TVET might be seen as unaffordable by many governments, enterprises and training providers. It is therefore particularly important that the Developed Countries that have already developed and included certain elements of quality assurance in their national TVET Systems, share their best practices and innovations with Developing Countries.

#### **H. Quality Assurance of the TVET System**

It is out most important in managing TVET Systems in Developing Countries that a robust system is established at the national level to set traditional criteria for

management of quality assurance of the TVET System. Such system is generally known as TVET Quality Assurance Management System CAMS. The Competency Assurance Management System CAMS is an established evidence based quality control and assurance system identifying the methods and procedures followed up to ensure that employees / apprentices/trainees within Enterprises and TVET Institutions have the awareness, skills, knowledge and attitudes to provide evidences and perform all the tasks including Health, Safety and Environmental Protection HSEP Critical Tasks effectively to the required Competency Level (Standard) at Work Location through the training and development of the staff.

#### **I. Engaging Industry as Significant Players in TVET**

In order to convince and engage employers and enterprises (industry) to be significant players in TVET in different in Developing Countries, we should ensure the following:

- 1) Systematic professional development of TVET Trainers / Instructors / Teachers, Assessors and Verifiers
- 2) A TVET System should keep pace with technological advancements and use technology appropriates in technical education and training
- 3) Encouraging Continuing TVET and Lifelong Learning
- 4) Delivering a TVET Demand Approach
- 5) Develop and manage a robust evidence based Competency Assurance Management System CAMS with a view to set a traditional criteria for management of quality assurance of the TVET System (Quality Based TVET)
- 6) Change the Mindset of parents, the community and stakeholders about vocational education being second choice to academic education
- 7) Implement “vocational disciplines” through respective academic subjects at universities (Vocationalisation of Higher Education HE) and identify the areas where HE and TVET could improve their collaboration with a view to facilitate seamless pathways for learners and allow learners to enter gainful employment or pursue HE opportunities

#### **J. Establishment of Monitoring and Evaluation M & E Systems in TVET Projects**

Monitoring and Evaluation M & E Systems are generally established within TVET Reform Projects / Pogrammes in order to:

- 1) Provide a rational basis for planning and implementing quality management for TVET within different Enterprises and Vocational Institutions. In general, “Monitoring System” measures the progress of learning, education and training activities and programmes and ensures that objectives are attained while “Evaluation System” on the other hand is used to assess and determine the effectiveness and relevance of the learning, education and training activities and programmes in the light of the stated objectives.
- 2) Monitoring and Evaluation M & E Systems are the key to an effective measurement of the entire TVET Reform Project / Programme and essential tools of ensuring quality improvement. With the appropriate indicators, tools and processes, M & E Systems establish performance standards or



indicators that would be used to track past performances and forecast future outcomes.

#### **K. Establishment of Management Information System MIS & Knowledge Management KM System**

A Management information System MIS is generally established within TVET Reform Systems / Projects / Programmes in order to:

- 1) Provide a process that facilitate an effective, efficient and timely internal information and data collection from different TVET Institutions and Training Providers and make it accessible to all levels with a view to manage TVET effectively.
- 2) Support the management of most of the administrative functions such as finance; personnel, student admission, resource planning, payroll functions and library functions, etc.
- 3) Support the sharing of information from resources which are fully familiarized with the prime collectors of labor market details and statistics.
- 4) Establish a platform for external partnership involvement with the information system related to the labour market

On the other hand, a Knowledge Management KM System within a TVET Reform System / Project / Programme is used as a process through which the TVET Institutions generate value from their intellectual (intelligence) and knowledge-based assets. Most often, generating value from such assets involves organizing and collecting, together in a systematic way, what the staffs of a particular TVET Institution or particular customer (enterprise) knows and sharing that information among different TVET Institutions and customers (enterprises) in an effort to collect best practices.

### **3.0 ANALYSIS AND DISCUSSION**

In spite of the limitations presented in Section 2.0, the significance of TVET to the development and industrialization of the economies of Developing Countries cannot be overemphasized. in Developing Countries need to be more inventive and innovative in a way she can develop the solutions and methods mentioned in Section 2.0 to alleviate their problems internally.

Developing Countries must appreciate that the adoption of foreign technologies and theoretical concepts of the Developed Countries is unsuitable because the Developed Countries are industrialized and developed within contexts and circumstances different from the context and circumstances facing Developing Countries. The TVET thus remains significant because it provides an opportunity to develop practical solutions to Developing Countries' problems, based on a thorough analysis of the prevailing conditions.

A robust and well established TVET Reform System / Project / Programme should lead to the development of technologies that are tailored towards meeting the needs of the community. However, it must be emphasized that acquisition of skills is not sufficient to eliminate all the problems facing Developing Countries. It is a prerequisite, but a lot

more needs to be executed. Political instability, poor governance, poor economic policies and unequal distribution of income among other ills must be abolished if the significance of TVET is to be felt.

#### **Risks involved in a TVET Reform System / Project / Programme**

In order for the Developing Countries to achieve the objectives of their TVET Reform Systems / Projects / Programmes successfully, they should be fully aware that for any particular TVET Reform System / Project / Programme, the main inherent and substantial risks related to the implementation of the solutions referred to in Section 2.0 are:

- I. Capacity of all TVET actors to draw lessons from decentralized experiments and allow for flexible and alternative approaches when conducting TVET policy.
- II. The willingness of enterprises, especially small enterprises, to commit themselves, on continuous basis, to carry out TVET.
- III. The institutional capability of TVET Providers to manage directly the actions required to adapt TVET Curriculum and Programmes to enterprises needs, and their willingness to co-operate with enterprises on a continuing basis at a decentralized level. The current legal and financial conditions of the public TVET Providers may need to be modified.
- IV. The, eventually, weak capacity of the authorities to lead the TVET donors' coordination process.
- V. The capacity of all TVET actors to draw lessons from decentralized experiments and allow for flexible and alternative approaches when conducting policy reforms.
- VI. Unexpected change in sales tax status, etc. which might affect TVET financing.

#### **Risk of Derailment in a TVET Reform System / Project / Programme**

For contractors selected to undertake activities associated with the reform of TVET systems in Developing Countries, the above assumptions and risks could include events, conditions, or decisions which are outside the control of the contractors and might derail their efforts. Accordingly such contractors should monitor and evaluate M&E the above explained risks and assumptions affecting the execution of the contract with a view to consider all possible actions, means and methods, which reduce the Risk of Derailment or work on the basis of calculated risk.

#### **4.0 CONCLUSIONS AND RECOMMENDATIONS**

It is evident that the significance of TVET is not being felt in Developing Countries because of the limitations facing this sector and accordingly we are suggesting in this paper to apply all or part of the remedial solutions mentioned in Section 2.0 with a view to achieve the following objectives, goals and way forward:

- 1) **Ensure that TVET is more market driven (Demand driven TVET)**
- 2) **Control and assure the quality of TVET (Quality Based TVET)**
- 3) **Establish more TVET Institutions (Vocational Institutes, Vocational Training Centers, Technical Industrial Schools) with a view to provide technical and vocational education and training to meet the needs of the community**
- 4) **Establish different decentralized Enterprise Training Provider Partnerships ETPs for different sectors of industry**
- 5) **Set clear national TVET strategies and policies**
- 6) **Increase funding towards TVET. This should be directed towards research and development, acquisition of appropriate and up-to-date equipment and tools and general maintenance and management of TVET institution**
- 7) **More attention or equal attention should be offered to the TVET sector as that offered to the General and Higher Education HE**
- 8) **Encourage industrial organizations to participate in the formulation of the curricula, provide On-the-Job Training OJT programmes and certify the competencies offered**
- 9) **Governments should encourage industrial organizations to participate in TVET in general by creating incentives for companies, reimbursing training costs, subsidizing apprenticeship wages and for those companies who earn huge profits, by allowing for tax claiming**