

# PRINCIPLES AND STRATEGIES OF A SUCCESSFUL TVET PROGRAM



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## ACKNOWLEDGEMENTS

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Management & Training Corporation (MTC) is an international corporation dedicated to helping people realize their learning potential. MTC creates nurturing environments in which education is encouraged and rehabilitation is recognized. MTC manages and operates 24 Job Corps centers in 19 states for the U.S. Department of Labor, preparing disadvantaged youth for meaningful careers. MTC also operates 18 contracted correctional facilities across the US with approximately 24,000 beds under contract. In addition, MTC has expanded its education and vocational expertise into the international arena, working in countries such as Iraq, Sudan, Mongolia, Jordan, and Palestine. The MTC Institute is the research division of MTC, which is dedicated to promoting innovations and exemplary practices and projecting trends that are relevant to job training and corrections. The work of the Institute is geared toward a broad audience including policy makers, educators, researchers, practitioners, state and federal officials, workforce development entities, correctional agencies, Job Corps centers, international donors and operators.

## INTRODUCTION

As the world emerges from the current economic downturn, the ability of a country to increase the skills of its workforce is a significant concern to business and government. The need to increase employment opportunities and to enhance the workforce's social mobility through improved employability is particularly pressing in those countries where a full school education followed by university may not lead to employment. Recovery from the latest economic meltdown is not being evenly experienced globally, but there are some troubling consistencies.

Some of the consistencies include an ever apparent youth bulge as youth unsuccessfully seek entry to formal employment, and an ever increasing expansion of the 15-30 year old group (in terms of the total workforce population) has not provided the fuel for reducing a global skills shortage. As the global demand for skilled workers has strengthened, the capacity of national economies to meet that demand has declined. This is particularly true given these important facts:

- An extra *one billion* people in the world will become of working age within the next decade<sup>1</sup>,
- Those 15 to 25 years of age in developing countries represent 85% of the world's population<sup>2</sup>, and
- Conservatively, 89 million more secondary training places are needed by 2015<sup>3</sup>.

In response to the growing demand and need for skilled labor and technicians across a wide range of sectors, a comprehensive, up-to-date, and effective Technical and Vocational Educational and Training (TVET) program is essential to a country's effort to:<sup>4</sup>

- Expand levels of education and training cooperation between public and private sector employers,
- Increase productivity,
- Reduce poverty through comprehensive and productive activities,
- Build trade capacity, and
- Further develop priority sectors including energy and the environment.

Collectively, an approach that increases employment, improves employability and social mobility, and stimulates trade and commerce will steadily reduce poverty and improve both personal and national income levels.

It is well recognized that the development or re-development of a relevant market and responsive TVET system is not an exact science. Historically, different countries, particularly those with a strong industry base and infrastructure, have articulated quite distinct TVET systems. In some countries, higher education and TVET are structured as a dual-sector with an overarching national qualifications and training framework. In other countries, TVET is quite separate from the formal school education system and is often regarded as a deficit system that leads to poorer employment opportunities and low income. Indeed, in some countries, former Soviet economies for instance, TVET teachers are paid more poorly than primary school teachers and TVET colleges are in a poor state of readiness with



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tools and equipment well past their usefulness. While some TVET systems are complex, dynamic and heavily driven by private sector/industry engagement, such systems may not easily be replicated.<sup>5</sup> Others are poorly developed, fragmented, and unresponsive to employment demand and should not be replicated.

It is generally agreed that a modern and responsive TVET system needs to take into account current and expected socio-economic conditions including labor market demand, the needs of both the formal and informal sector in relation to employment, and the professional capacity of TVET teachers and instructors.<sup>6</sup> Further, TVET must attend to the specific employment needs of both rural and urban situations and take account of belief and value systems, religions and customs, and different (particularly in relation to gender and social dimensions in training and employment) regional and indeed climatic variations between regions within a country.

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Management & Training Corporation (MTC) has learned, as have most international TVET contractors, through our experiences working in the U.S. and diverse countries such as Iraq, Sudan, Mongolia, Jordan, Palestine, that it is crucial to make careful distinction about the structure and function of TVET. This holds especially true as more developing countries consider adopting or adapting TVET reforms, particularly when borrowing approaches to TVET from other countries. This includes an appreciation of uneven levels of numeracy and literacy and interestingly, the quality of the national government and education governance.

MTC recognizes that a TVET system that works well in Indonesia may not work as well in Zambia. Since each country and economic situation is different, it is important to search, identify, define, and apply what can be considered the basic principles of an effective TVET system. The top six (6) principles inherent in a successful TVET system are:<sup>7</sup>

- Relevance to the labor market (one that meets employer's needs and expectations),
- Access for trainees,
- Quality of delivery,
- Standardization,
- Inclusion of soft skills, and
- Funding for the system is secure and uninterrupted.

A country or regional contextualized and customized approach to TVET is best as it permits one to validate skill sets and adjust the approach of learning as it best fits the country or region.

## MAIN PRINCIPLES OF A SUCCESSFUL TVET SYSTEM

**1. Relevance to the Labor Market:** An effective Technical and Vocational Education and Training system within a country is a critical pillar of any successful economy. It can serve as the impetus to boost the value of the nation and its GDP in the global marketplace. Effective TVET also recognizes that education and training in any country needs to be based on reliable labor market information and demand and employer needs, particularly in priority trades and occupations.

To illustrate, this is the focus of the partnership between Korea's Samsung Corporation and the Korea University of Technology (KUT). In 2005, the KUT established a KUT-Samsung Electronics High-technology Education Center (KSHEC) in cooperation with Samsung for the purpose of human resource development and human talent management through high-technology education. A key task of KSHEC is to develop and launch programs for job skills training including high-technology education.

The KUT provides buildings, facilities, and faculties, and in general a physical and institutional TVET infrastructure for training and education. While Samsung funds the purchasing of essential equipment, instructional technology and learning materials. KUT and Samsung jointly drafted curricula and courses of study, which are designed to meet the demand of clients. This partnership has been developed to lessen the mismatches between the outcomes of the technical education system and the demands of the labor market.

Another example of this arrangement is found within the TVET system in Australia. TVET in Australia is organized under Technical and Further Education and Training, or TAFE. TAFE is part of a dual education system that enables students to follow a pathway of formal academic school education leading to a tertiary education or a TVET program equivalent to the senior years of secondary education that leads either to employment or tertiary education. The TAFE approach is linked directly to employment. Although students undertake a certificate level training program, they must undertake an apprenticeship or work placement throughout their training. The TAFE training is based on senior secondary school and university equivalence, but the majority of TAFE graduates are employed immediately or are already employed. This training is heavily demand driven and aims to meet both the immediate and long-term requirements of industry. The emphasis on training is preparing work-ready graduates, meaning graduates who are not only employable but who do not require further on-the-job training. Industry is highly involved in TAFE. For instance, the industry forums enabling National Skills Councils provide the key expertise and the knowledge and skill sets for certification of training and the provision of academic awards to trainees/students on graduation.

It is evident from these examples that market-driven training requires collaboration and coordination with employers to determine the educational and training needs in order to satisfy unmet demand.<sup>8</sup> This is a dynamic process as demand and employer need must keep pace with changes in technology and the rise of new skill sets. To this end, a responsive TVET system will include methods to gauge/survey employers to gather labor market information. This information will guide changes in the training of school graduates, employees in need of upskilling, and students attending TVET colleges and similar training organizations. Government can implement the appropriate steps needed so that training meets the professional demands and future growth of the workforce. Developing countries are well poised to train their citizens in industries that best fit a country's needs while avoiding many obstacles which developed countries have had to overcome, particularly in the reliable funding of TVET.

**2. Access for Trainees:** One of the fundamental aspects of a successful TVET system is the access that it provides to trainees. It is important for trainees to be able to enroll easily in training and have adequate trans-

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portation to TVET schools Access also involves ensuring that there are sufficient populations in close proximity to a training facility, so that an adequate number of trainees are available to ensure the school/college is fully enrolled and has strong retention and participation rates. Access, affordability, and proximity are therefore important considerations for TVET expansion activity. Taking account of this, it is also necessary for the training facilities to be near employers. Staff from key industries need to be able to regularly visit the schools/colleges to ensure that training and equipment is up-to-date and relevant, thereby addressing employer needs. These attributes underpin graduate pathways to relevant and quality employment opportunities.

**The South African National Qualifications Framework (SANQF)**

**The SANQF was implemented with the intention of integrating education and training in order to boost skill and productivity levels and to facilitate mobility and progression within training and career paths.**

**The SANQF provides a mechanism for awarding qualifications based on the achievement of specified learning outcomes prescribed by industry. The national qualifications framework (NQF) allows for accumulation of credits and recognition of prior learning, which promotes the culture of life-long learning.**

*Source: International Journal of Vocational Education and Training. Vol. 17, number 2*

Within the education system of the United States, community colleges were founded based upon these guiding principles for ensuring access. These colleges typically offer two-year degrees, many of which incorporate technical training. The community college system was developed to be as accessible as possible, to serve all ages of students and be able to customize training. Community colleges are much easier for students to gain admission; in many cases they serve larger student populations than major universities in the same cities and towns. Many of the technical programs (courses of study and qualifications) are based on recognized employer needs and demand. This training to employment pathway is essential to the success of the community colleges, graduate and employer satisfaction.

The community colleges are a central ingredient for more citizens being able to take advantage of a wide range of available training and university programs, thus providing a greater potential for real and sustained local and regional economic development and growth. Training must be provided within the resources allotted, but all efforts need to be made to make TVET open to as many people as possible.

Increasing access can be better achieved by integrating or mainstreaming TVET into the traditional and compulsory school education system. Integrating TVET within the national school education system will provide greater opportunities for students to know that TVET is the next step beyond compulsory education. Many students in developing nations do not have the means to attend tertiary higher education but would gladly participate in more affordable TVET programs if they were available. This type of system would mirror what takes place in Germany, which has multiple tracks of learning after compulsory school education.<sup>9</sup> Furthermore, this integration could also provide dropouts of formal school education the ability to gain work skills, enabling better direct access to formal and well-paid employment. This in turn would allow for such students to make a more effective contribution to their communities and society in general.

In many cases, students are unaware of the benefit TVET opportunities give them. An entrenched and largely historically-biased outlook that a TVET system reflects a deficit approach to education and training still prevails in many countries. New TVET activity in developing countries such as the former Soviet Republics of Central Asia, Vietnam, and Indonesia remains constrained by an outlook that TVET is inferior to a university education. This outlook prevails despite skill shortages in key industries, including mine operations, transport infrastructure, civil construction, plumbing, and automotive technologies. This situation is not necessarily the fault of

the TVET program or the country, but in many cases is due to history and geography.

Many TVET programs are established in urban areas owing to the centrality of industry linkages in vocational education and training and the overall advantages of a larger population. Rural and remote areas are often left out of the TVET mix, and as a result of this, rural TVET colleges become under-resourced and lose relevance. Frequently, rural youth move to urban areas seeking further education and employment. Not having the required skill base, such youth face lengthy periods of unemployment or under-employment and cannot contribute to a developing economy. This situation aggravates the ever present youth bulge which eventually leads to a continual cycle of poverty including inter-generational poverty, and illegal activities.

By encouraging TVET to be delivered in both strategic urban and rural areas, a developing country will see that a trained workforce can thrive in both urban and rural settings, enabling more even and equitable economic growth. Still, TVET instructional programs delivered in rural settings must be well-targeted and reflect the industrial and commercial capacity of that rural area. It is in rural settings that decisions regarding the mix and balance of formal and informal TVET must be carefully considered.

**3. Quality of Delivery:** The quality of a TVET system is largely determined by the industry partners; they are the key drivers of the system who work in collaboration with the operators of the country's TVET system. Linking training to certification requires a uniform framework based on:

- (i) Competencies (including competency development frameworks),
- (ii) Standardization of competencies (as quality standards),
- (iii) Occupational standards (that define competencies and which describe good work practice) and National Occupational Standards (NOS),
- (iv) The development of a National Qualifications Framework (NQF) as a result of NOS, and
- (v) Certification of competencies (which brings competency-based training and competency-based assessment into a comprehensive national, regional, and international framework).

Competencies qualifications and standards may be a conceptual area that some donor groups struggle with as far as inclusion and implementation. However, once this is spelled out and the benefits of vocational skills development (VSD) are recognized, the payback is clear. In TVET, VSD is what makes a decisive contribution to poverty reduction, increased incomes, and more robust social mobility. It is recognized throughout the international TVET community that some of the best examples of TVET systems are found in Australia, Canada, Germany, and the United States. Each system has stood the test of time and over the years, often through robust industry engagement, has developed highly responsive TVET systems that have the potential to modernize according to training and technological developments throughout industry. However, the complexities of these countries' TVET systems limit what can be adopted by a developing nation.

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The Japanese model of TVET takes place at the high school level with schools developing relationships with local employers who can pick from the “best and the brightest.” Countries such as South Korea, Malaysia and Singapore are more focused on a “Human Resource, “workforce Development” model where all entities, private, public and social, contribute to the training and employment of an individual.

Some countries may also employ an International Standards Organization (ISO) certification. ISO is the International Standards Board, which certifies organizations that create quality controls and internal standards in a variety of areas. Such certification is sought as a qualitative measure and ultimately will enhance the ability of the TVET graduate to have a portable certification/credential.

**Industry is more than a partner in the TVET system; in fact, it is the key driver. Industry plays the major role in the setting of occupational and competency standards; it is the underbelly of the national qualifications framework and quality assurance provisions. Industry is the nuts and bolts of a quality and effective TVET system.**

Certifications backed by specific competencies and standards and a NOS make them more valuable than training that is not supported by industry leaders. By aligning curriculum and training, a country will inevitably attract business partners and foreign investment, as well as economic growth due in large part to the well-trained workforce. The use of industry-recognized certification of workers also promotes the concept of lifelong learning.<sup>10</sup> People with a certification will seek to maintain that certification and keep up their skills in the techniques and methods of their trade or profession.<sup>11</sup> This all adds relevance to the trainees and their successful integration into the workforce.

It is vital to a country’s ongoing success to invest in its citizens by strategically implementing a TVET system that capitalizes on its natural resources and needs, so as to create goods and services in demand within and without the country. Local industries need to play a part in any TVET system so that training is aligned with needs.<sup>12</sup> In Australia, industry provides considerable leadership through National Skills Councils (which set occupational standards, define competency sets, and prepare courses of study for each trade/trade cluster). Effectively, the TVET providers purchase Training Packages from the National Skills Councils. This is not the case in the US, where a single corporation (Ford, Caterpillar, Microsoft) prepares the training packages which are not meant to be sold on the national market. In most developing countries, it is hoped that industry will take the lead and be the key driver.

**4. Standardization:** While increasing access to the TVET system it is important to remember that there is also a need for standardized training. Though seemingly daunting, if a TVET system is adopted at a national or regional level, the cost and time needed to train instructors and trainers will be greatly reduced. By adopting TVET in this manner, training can be coordinated so that all trainees receive the same training, making all trainees more marketable to employers no matter where they are within the country or region. Uniform standards also help countries adapt their systems to match global standards more closely, making the country and its workforce more globally competitive. India is a good example of standardization. While the country is proliferated by many private run TVET institutions, the public TVET systems have adopted international standards and curricula to ensure quality and uniformity.



By adopting TVET at a national or regional level allows for use of economies of scale and consistency when training trainers. Trainers can be taught the same curricula, using the same standards, and teaching techniques. This consistent and systemic training lends credibility to the courses offered. Employers will then know that the training received was of a certain standard and caliber. Further, employers would know that even if an applicant/employee comes from a different part of the country or region, the training they received was the same as those from the employer's area. This was reason for creating the European Qualifications Framework (EQF). Though not regionally or country focused, the EQF links different country qualification systems together, acting as a way to make qualifications more readable and understandable across different systems and countries in Europe. One of EQF's main goals was to allow for more mobility of citizens from country to country.<sup>13</sup>

After experiencing a severe economic crisis in the 1970s-1980's, Ireland developed social partnership programs that include an accountability structure to ensure that students master the skill sets before entering the labor market. The private sector assists in validating skills prior to work.

However, there is much to be said about the informal training that takes place throughout developing nations. Many of these informal systems mirror an apprentice model, with hands-on training being the majority of learning. People trained in this informal atmosphere tend to have an adequate base of understanding about a trade, but are limited by a lack of education and ability to expand that base, unless they are able to access a formal training school or somehow able to become involved in a distance learning environment. However, "in the developing world, non-formal education can have as high ROI as formal schooling."<sup>14</sup> Because of the importance of the informal sector of training there is a push to formalize it this is taking place in the form of Vocational Education Centers (VEC). The United Nations Educational, Scientific, and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), and other organizations monitoring best practices in TVET have identified VEC as an effective, practical, and relevant mode of training delivery, particularly in remote rural areas. A VEC serves as part adult learning center, part day-care center, and part primary school, and already-literate or skilled adults are responsible for much of the teaching.<sup>13</sup>

**5. Inclusion of Soft Skills.** The global economy demands much more from people than it has in the past. Competition is no longer just local, and this drives up the demands on employees, focusing employers on developing employees that are more engaged in work, that local customs or norms might have hindered in the past.<sup>16</sup> This demand might be seen in time at work, type of work, or different interactions. These demands may clash with local customs or beliefs. Instead of trying to eliminate these customs TVET students need to be trained in the demands that their industry may require. This will help both industry and employers to adapt their customs and beliefs to what might be a new way of doing business. In many cases this type of training is categorized as soft skills. These are the skills that all employers say they want (i.e. timeliness, productivity, teamwork, etc.). In many countries, some soft skills will take time to be inculcated due to customs or other regional issues and a movement towards global norms.

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**6. Funding for the System Is Secure and Uninterruptable:** For a TVET system to become a success, it needs to have government support in the way of a continual funding stream. Many TVET systems in developing nations are funded by outside entities.<sup>17</sup> These entities may include USAID, World Bank, or the UN. Though these organizations provide needed funding for TVET, the funds are typically not available over a long span of time. However, the funding provided by outside organizations gives developing nations the initial investment, and once established as a value-added system to employers, policy makers find ways to continue the funding. State Training Fund (STF) instruments are the most common; in the US, STFs exist but are different from state to state. In Australia and other small population countries, the State Training Fund is nationally managed. This model is often cited as an example (by World Bank for instance) for use in other countries.<sup>18</sup>

South Korea is an example of a country which has had rapid economic growth. But, the Korean TVET system today is still very government developed and run, despite their efforts to include the private sector. Policies are still written and enforced at the national level and local administrations have relatively little autonomy. The same is true in Mongolia where the government is still working under the mindset of the old Soviet Union.

Indonesia has a TVET system that has benefited from multiple donors and programs over the years and includes comprehensive policies and regulations. However, most of the schools very sporadically follow the regulations which results in a non-uniform approach even though the government believes that the schools are all in alignment.

Once begun, developing nations need to implement strategies that more developed nations have used to fund not only education but vocational training as well.<sup>19</sup> These may include, but are not limited to, payments from students, levying taxes, employer financing, grants and donations from international organizations and foundations.

Some TVET schools also include entrepreneurial programs where students produce a product and learn how to market and sell the product, thus providing another funding source for the schools.

## TVET PROVIDES POSITIVE RETURN ON INVESTMENT

No matter how aligned a TVET system is with employer needs, or how well-equipped the trainers and educators are, or how many training facilities are available, there are some conditions which need to be present to help make TVET successful. Several conditions seem to be necessary for achieving the return on investment that everyone desires through TVET; supportive government policies and an infrastructure which enables an effective and efficient TVET system. In Jamaica, for instance, a study of their national TVET system reported a positive return on investment.<sup>20</sup>

Some of the key findings of this report were that:

- TVET has a high impact on the country's productivity growth.
- TVET makes its recipients relatively secure from poverty and extends and sustains this security into retirement years.
- TVET reduces inequality, filling income gaps that would otherwise exist between the rich and the poor.
- Through the reduction of inequality and its direct effects in increasing the average number of years of schooling, TVET reduces crime and the high costs of crime.
- TVET reduces migration and offsets the high costs of the brain-drain.
- More TVET leads to moderated family size, reduced vulnerability, and higher security of living conditions for the family of the TVET graduate. In many cases, the results generated by, say, Level 1 occupational training is better than those generated by secondary Grade 11 education.
- TVET perpetuates its benefits into retirement by maintaining or raising income during retirement years.<sup>21</sup>

### POLICY RECOMMENDATIONS TO GOVERNMENT OFFICIALS

Though many TVET systems have seen a return on their investment, there is nothing that can hinder TVET more than government rules, regulations, and laws which detract from the support needed for an effective education and training system. If the costs, both financial and non-financial, are too high, not many people will seek out a TVET program to help improve their situation. Restrictive laws that allow only the wealthiest of society to access higher education do nothing for a developing country but marginalize the lower class.

If countries wish to develop economically beyond their current circumstances, governments need to ensure that the appropriate rules, regulations, and laws are in place to ease the development of programs, perpetuate funding streams, establish a framework for uniform standards, and encourage or incentivize employer involvement. Furthermore governments need to establish funding mechanisms, whether from outside organizations or from tax and levy policies, that will be adopted to pay for the TVET system and any supportive infrastructure.

In addition, there needs to be consistent tracking and measuring of effectiveness in the TVET system. The global economy requires attentiveness to success factors, and a country must be willing and able to see what is effective and what is not, and adapt their training system accordingly.

Governments play a critical role in the success or failure of these systems. Governments need to be invested in the TVET system enough to provide what the TVET system may require. Therefore, government policy makers must ensure their TVET system:

- Is aligned to current and future labor market demands;
- Engages the business community;
- Has policies, regulations, and laws which support TVET;

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- Has a funding source to maintain the TVET system; and
- Includes the ability to track and measure the effectiveness of the training so that improvements and changes can be made when needed.
- Sustainability

Finally, to sustain the system and produce the quality of employees that businesses need, students must have an educational foundation which enables them to take advantage of the offerings of the formal TVET system.

**An effective Technical and Vocational Education and Training system within a country is a critical pillar of any successful economy. It can serve as the impetus to boost the value of the nation and its GDP in the global marketplace.**

## CONCLUSION

The global economy demands much more from people than it has in the past. Competition is no longer just local, driving up the demands on employees, focusing employers on creating employees that are more fully engaged in the work.<sup>22</sup> An effective TVET system needs to take into account not only principals and standards, but also the socio-economic conditions, informal sector needs and TVET capacity, and labor market demands.<sup>23</sup> Further, TVET needs to address the needs of both the rural and urban; different beliefs, religions, and customs as well as different regions of the country. While increasing access to the TVET system, there is also the need for standardized training. Though seemingly daunting, if a TVET system is adopted at a national or regional level, the cost and time needed to train instructors and trainers will be greatly reduced.

For a TVET system to become a success, it needs to have government support in the way of a continual funding stream. Whether from international groups or by utilizing a State Training Fund, this policy decision is essential to a long term effective TVET system. Without proper funding even the best TVET system cannot be sustained in a manner which supports business and growth in the country.

While the quality of any TVET is greatly determined by the industry partners, the TVET system needs to provide access to its trainees. It is important for trainees to be able to enroll easily in training facilities. Access also involves ensuring that there are sufficient populations in close proximity to a training facility so that an adequate number of trainees are available to maximize the use of resources. An effective Technical and Vocational Education and Training system within a country is a critical pillar of any successful economy. It can serve as the impetus to boost the value of the nation and its GDP in the global marketplace. TVET success can be found anywhere in the world under many different circumstances. The key to this success is that the TVET system be adapted to a specific country. No one will be able to take what works in one country and transpose to another. There are too many variables involved in that for success. However, different pieces can be used from a variety of TVET systems that when put together, like a puzzle, any country can find success. It is a matter of finding the right pieces and using basic principles for success.



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