

Technical and Vocational Education and Training Development Journal

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A Milestone for the Enhancement of TVET Sector

This is a matter of pride for us to publish the 12th issue of **Technical and Vocational Education and Training (TVET) Development Journal** as a continuous series from last three years. The articles covered in this issue have been categorized into five major areas: TVET policy, Training and Employment, TVET Management, Quality Assurance, Training and Employment and Equity and Access.

Education and training journals are considered very important resources for the intellectuals, authors, researchers and other stakeholders for study and research. Quality journals in education sector are scarce particularly in a developing country like Nepal. Moreover, specific journals in sub-sectors such as TVET are difficult to find. In this context, Council for Technical Education and Vocational Training (CTEVT) as the apex body of TVET in Nepal, has been putting its endeavors to bring out the journal in TVET sector.

The dedicated CTEVT personnel under the leadership of Mr. Rajendra Karki, Director from Research and Information Division, were involved in publishing this journal. The editorial team tried to make the journal inclusive by capturing the articles of authors from various segment and identity. Whatever the difficulties encountered in the process of bringing out this issue, it is hoped that the result will pay off.

The thoughts and ideas captured in the articles from authors are expected to guide the future direction and pave way for the people who are engaged in the field of technical education and vocational training. The editorial team believes that this journal will be a milestone for TVET development in Nepal and abroad. The intellectuals, researchers, students and other stakeholders who need TVET information can obtain much of it from one piece document.

The editorial team would like to express its heartfelt gratitude to all the authors who have their articles. The team would also welcome articles from the intellectuals, professionals and others in various areas relevant to education and TVET sub-sector for the next issue of the journal.

It is believed that one more brick has been added for constructing the building of TVET sub-sector by means of this journal. We always look forward to receiving constructive suggestions from the readers that will inspire the editorial team for further improvement. The ultimate responsibility of ideas and views expressed in the articles remains on the concerned authors.

Editorial Team

Table of Content

S. N.	Title	Author	Page
A TVET Policy			
1	Poverty Reduction Initiatives in Nepal with Special Reference to Technical Education and Vocational Training	Prof. Dr. Tanka Nath Sharma	
2	Role of TEVT in Reviving Traditional Arts, Crafts and Sculptures	Dr. Poorna Kanta Adhikary	
3	TVET: Reaching to Unreached	Dr. Ramswrup Sinha	
B Training and Employment			
4	Observation of Technical Education and Vocational Training (TEVT) Approach and Design	Dr. Kul Bahadur Basnet	
5	Stage of Economic Growth and Employable Technical Skills	Dr. Lokendra Prasad Poudyal	
6	Education and training for economic growth: what can we learn from a value chain approach?	Dr. C. Howard Williams	
7	Green Technical and Vocational Education and Training (TVET) for Sustainability	Diwat Kumar Shrestha	
8	TVET of Nepal in the World of Work	WakilJha	
9	TVET in Dairying – a key intervention to flow	Upendra Pokharel	

urban money to rural areas

10 Apprenticeship: An Overview Mohan P. Bhurtel

C TVET Management

11 Role of CTEVT in Producing Human Resources of Health Service in Nepal Dr. Gopal Khanal
Bisnu Koirala

12 Contemporary TVET Management Practice in Nepal: An Overview Rajendra Karki

13 Technical Vocational Education and Training: Global experiences for Nepal Hari Prasad Lamsal

E Curriculum and Quality Assurance

14 Prospects and Challenges of TVET Teacher Education in the Context of Nepal Dr. Bhawani Shankar Subedi

15 Measuring Competency for Optimizing Learning Opportunity to Ensure Quality Skills Training Dr. Hari Pradhan
Chandra Kant Adhikari
Sandip Poudel

16 Importance of Ethics in Research: A Short Look Prof. Dr. Ritu Prasad Gartoulla

17 Efficiency and Effectiveness of Vocational Training in Nepal Pushpa Raman Wagle

18 Experiences in Monitoring and Evaluation of Vocational Education in Nepal Bhoj Raj Neupane 1

D Equity and Access

19 Factors Affecting Access of Disadvantaged Groups (DAGs) to TVET Dr. Ram Hari Lamichhane 1

- 20 Vocational education, Social participation and
Livelihoods in the post conflict situation of Nepal Jeeb Narayan Kafle
- 21 Challenges of empowering women for the
labour market Women in Nepal: empowered
socially but not economically Siroco Messerli

Poverty Reduction Initiatives in Nepal with Special Reference to Technical Education and Vocational Training

Tanka Nath Sharma¹

This article has discussed about how the issues of poverty has always been an overriding concern in development planning in Nepal and what are different approaches taken for targeting poverty reduction in the past. It has further comprehensively defined the initiation taken through technical school system targeting to the poor disadvantaged out of school youth to reduce poverty. Up to now several poverty reduction programs focusing to technical education and vocational training are implemented in Nepal through government or non-governmental sector. It has been difficult to keep track of all poverty reduction initiatives recently in operation with objective of poverty reduction through skill development. Despite these various efforts of poverty alleviation over the different periodic plans of the state, there was around 25 % population who were living below the absolute poverty line toward the end of the Three year Interim period (NPC 2011). Even those people who are above the nationally adopted poverty line, they are also living with measurable conditions in terms of basic things such as food, cloths, shelter, health, sanitation, and education services. Pro-poor projects and programs are fragmented with little coordination among them. Therefore, coordinated focused intervention is required to create synergy, efficiently utilizing available funds and ultimately reduce the targeted incidence of poverty during the current plan period.

Introduction

“Poverty refers to deprivation of resources and materials along with low achievement in education, health, exposure to risk, lack of voices, involvement and empowerment. These elements combined severely restrict the capability of an individual to escape from poverty” (ADB, 2001). Poverty has two dimensions: (1) low income to lead a dignified life and (2) low level of human capabilities which restricts citizen’s options to lead a life of his choice. The conventional antipoverty followed by many developing countries, which focuses on income and basic needs have failed to reduce powerlessness and negative attributes associated with it. “By contrast, the empowerment approach-with its stress on enhancing individual entitlements, capabilities, right and freedom- is one of the four pillars of human development and effectively reinforces the other three: equity, productivity and sustainability” (UNDP, 2004, p.2).

Since the beginning of 1990s, the focus of development has been shifted from economic growth model and national income accounts to enhancing capabilities and enlarging people’s choices as means to alleviating poverty. The human development paradigm asserts that economic growth alone is not sufficient and improves the lives of the poor. It is also necessary to invest in education and primary health care and to enhance people’s capabilities through greater freedom (UNDP, 2001). People should have the liberty to engage fully in the labor market, to peruse education and to control resources. Human capabilities can be enhanced by providing appropriate education and training in a pro-poor environment. Therefore, education and training is instrumental to the poverty reduction. This paper describes the socio-economic context, poverty situation, initiatives of poverty reduction and future strategies of making TEVT instrumental to poverty reduction.

Socio- Economic Context

Nepal has a population of 27.5 million, with 25.4 per cent of the population living below the national poverty line. Nepal’s Human Development Index is 0.428 with a rank of 138 out of 169 countries. In terms of Human Development Index, Nepal is one of the ten nations making the swiftest development gains over the years

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(UNDP, 2010). Despite of significant progress made in health and education, Nepal still remains one of the poorest countries with poor economic development with a wide gap in the education sector between villages and cities.

Nepal is a multi-ethnic, multi-lingual and multi-religious country with diverse cultures comprising some 101 caste and ethnic groups speaking over 91 languages and practicing eight different religious beliefs. The majority of people live in villages and small towns scattered across the country. Though certain geographical areas of Nepal are strongly associated with particular ethnic/caste groups, there is an extensive scattering of various ethnic/caste groups across the country.

Economic performance

Nepal's Economic performance has not been encouraging for the past several years due to political uncertainties, labor disputes and poor management in industrial sector, unfavorable weather, and weakening remittances from workers abroad. While the two neighboring countries (India and China) are progressing with two digits economic growth Nepal remained stagnant having an average of 4% growth in last five years. This marginal growth was made possible by the contribution of small enterprises and sustained expansion of service sector (ADB 2010). Decrease in remittance inflows due to global financial crisis, slowing agricultural output, commercial Banks' excessive lending reduced liquidity, labour related problems, reduced electricity supply, inflation of two digits were reported to be the factors that had negative effect on macroeconomic performance (MOF, 2011).

Political uncertainty, power cut lasting as much as 14 hours will continue to obstruct the growth of non-farm activities. A slowdown in construction activities, high fuel cost and continued labor unrest has limited industrial growth (ADB, 2010).

The trend of labor mobility to the international job market is increasing every year due the very limited opportunities in the national labor market. However, constantly increasing number of labor force for the foreign employment has contributed to sustain the national economy from the remittance of migrant workers. For example in 2009, about US\$ 2.9 billion was contributed by migrant workers' remittance to the national domestic product (GDP), which constituted 24% of the total.

Under-employment and unemployment are widespread in all segments of the population; especially Nepalese youths are affected from it (ADB, 2011). Unemployment rate among the youths is double the national average. It is even worse in urban centers, where population is increasing rapidly due to absence of job opportunities in the rural areas, concentration of higher education facility in the cities and internal migration due to a decade long conflict in the past. Job opportunities are shrinking due to poor economic growth, political instability, business unfriendly labor policies, ineffective and insufficient skill development and employment support services and insecure investment climate. ADB (2011) claimed that Labor laws in Nepal, the most rigid in South Asia, are major block to job creation and need to be reformed to facilitate quicker recruitment and release of workers.

Literacy and Education indicators

Education and skill levels of labor force are essential predictors of labor productivity and economic development. Moreover, the relevance to needs of the labor market is also important to facilitate employment and economic productivity. Low levels of education and skills of economically active population also contributed to the under and unemployment of the workforce. Labor force survey (CBS, 2009) has depicted that about 47% of the total 15 years and above population (14.4 Million) has never been to school. Moreover, 10.75 per cent of the labor force had below primary level of education. Similarly, 13.49 per cent and 8.87 per cent of 15 years and above population had only primary and lower secondary levels of education respectively. According to the census 2001, 46.3% people above 6 years of age and 52% above 15 years of age were still illiterate. However recent records (DOE, 2009 & UNDP, 2009) showed that, the literacy rate for

15–24 year old age groups was 86.5 per cent. This figure is 4.5 percentage points higher than the government target for 2009. According to WB EVENT program document there is very little information on the proportion of the workforce that has participated in vocational training programs or other similar programs. Nevertheless, between 2005 and 2009, the number of official skill test-takers increased by 940%, indicating growth of training opportunities. However, intensive communication strategies would have to be adopted to raise awareness in the work force as the proportion is still low in relation to demands.

As a result of continued efforts and investment in education over the years through various programs and projects considerable development as well as expansion education infrastructure especially in basic and primary education has taken place (NPC, 2011). Nepal has shown remarkable improvement in the net enrolment rate (NER) at primary level in recent years. However, the NER for 2009, at 93.7 per cent, lagged behind the government target for meeting the MDG (by 2.3 percentage points). There has been a gradual closing of the gender gap in NER at primary level: it decreased from 6.7 percentage points in 2005 to 2.1 percentage points in 2009. However, the gender gap was particularly high in the Terai (5.1 percentage points in 2008) compared to the Hills and Mountains.

Despite significant improvement in access to education there is noticeable regional, caste and ethnicity based as well as gender based disparities in access to education. 5.5 per cent children of primary level school going age will never enter grade 1 and the dropout rate is higher in grade 1 (8.3 per cent) than in other grades. The rate of school going children who are admitted in grade 1 and stay in school until they reach grade 5 is 80.6 per cent. The promotion rates in the upper grades are better as than in Grade 1. The overall survival rate to grade five is 77.9%, with 77.8% for boys and 79.8% for girls (MOE, 2009). One of the estimates from USIS shows that the survival rate up to grade 5 is 79% and completion rate of the primary education cycle is 55% (USIS, 2008).

Low levels of education and skills of economically active population also contributed to the under and unemployment among them. Labor force survey (CBS, 2009) has depicted that about 47% of the total 15 years and above population (14.4 Million) has never been to school. Moreover, 10.75 percent of the labor force had below primary level of education. Similarly, 13.49 percent and 8.87 percent of 15 years and above population had only primary and lower secondary levels of education respectively. This indicates that only 20 percent of working age population had opportunity to reach to secondary levels of education. Majority of the working population who had no secondary levels of schooling have fewer chances to receive vocational training or engage in gainful employment. Because of such situation, Nepalese workers are compelled to work as unskilled labor with lower wage in the national or international labor market.

Education and skill levels of labor force are essential predictors of labor productivity, increase in individual income (poverty reduction) and economic prosperity. Moreover, their relevance to the needs of the labor market is also important to facilitate employment and economic productivity (ADB, 2011). Often the educational programs are disconnected from the demands of the labor market and hence have an adverse effect on the employability of the individual. Existing employment situation and economic growth patterns also suggest that school curriculum should include enhancement of entrepreneurship skills to facilitate graduates from secondary schools starting small enterprises and engage in self-employment (ADB, 2011).

Poverty Situation

According to NLSS 2003/04, Nepal has been able to reduce poverty by 10.91% between 1995/96 and 2003/04; and the major reason behind this reduction is the remittances. Despite unstable political environment, the proportion of the population living below the national poverty line of income about \$160 a year is estimated to have declined to 25% in 2010 from 31% in 2004 mainly due to increased remittance inflows, rapid urban growth, decline in fertility and rising agricultural wages (NPC, 2011; MOF, 2011).

However there is still wide gap among urban and rural and different geographical regions in the country. The poverty is disproportionately distributed at caste/ethnicity, regional and occupational levels. Among those under the poverty line, 67.0 percent are found engaged in agro-based employment and 11 percent as agricultural laborers. This indicates that prime means of employment for 78% percent of the total poor is in the agriculture sector. 74.3 percent of the total population of 15 years of age and above were engaged in labor force while 2.9 percent of them were unemployed and 22.8 percent remained inactive. Likewise, of the total labor force, agriculture sector comprises 70.6 percent while non-agriculture sector comprises the remaining 29.4 percent.

According to the recent Economic Survey (MOF, 2011), the poverty is also disproportionately distributed at caste/ethnicity, regional and occupational levels. There is a wide gap between the rich and poor and efforts are also needed to reduce inequality— currently the highest in South Asia, with a Gini coefficient of 0.47 (MOF, 2011). The Gini coefficient used to measure income disparity, however, revealed that such (disparity) rate increased from 0.41 in 2004/05 to 0.46 by 2008/09.

People consciousness and expectations after the historic political change of 2006 is rising. All people in Nepal including the poor and marginalized expect the government to build a New Nepal featuring, among other things, an inclusive, just society, an end to impunity, respect for human rights and a solid, vibrant democracy. The people also look forward to having a social and economic system that provides reliable access to good quality basic services such as education and health, generates jobs, protects the environment and eradicates poverty. A broad political consensus has not been achieved, nor has an efficient implementation framework been put in place. Furthermore, Nepal is in a fragile state facing new threats caused by the food crisis, the global financial crisis, the economic slowdown and climate change (European External Action Service, 2010).

Determinants of Poverty

Oftentimes, the determinants of income and capability related human poverty overlap each other. Looking from the wider and long-term perspective, low economic growth rate, the highly unequal structure of land resources, low agricultural productivity, highly limited access to agricultural market due to lack of infrastructure and information, disconnected regional and national economies, unequal exchange at the national and international levels, export unprocessed products in cheaper rate, import of semi-processed and processed materials in higher prices, weak industrial base, deskilling at the household and community levels, high incidence of rural indebtedness at very expensive rate and high level of unemployment and under employment collectively are identified as causes of large-scale poverty. These economic features went in parallel with political structure, cultural reproduction, semi-feudal control over the land and agriculture led to low agricultural productivity along with the deprivation of poor to the resources.

Literacy, education and skills are among the key proximate deterrents of poverty. There has been significant progress in literacy, education and skills. By 2010, nearly 95% primary school children are enrolled in schools. Schools are within the reach of the children; in most cases within half an hour walk. School fees and textbooks are made free and scholarship provisions for children from poor and marginalized families. Nonetheless, the rate of progress has been slow due to relatively low investment, severe household poverty, low local relevance of standardized curricula, household work burden of girl children in particular, low quality of school education, lack of professionalism among teachers, and full-scale bureaucratization of management, weak supervision and monitoring of school performance.

The emphasis on skill and vocation- building components remains very low at the school level. Similarly, the proportion of students enrolled in the vocational, "professional" and "technical" disciplines at the university remains extremely low, particularly from the poorer segments of the population. The link among education on the one hand and employment (and the quality of job performance) remains weak. Education-led poverty reduction, under the existing organizational and academic system, low sensitivity of education to rural and

agricultural employment, and the existing regime of low rate of expansion of employment, very limited access and opportunity for poverty stricken people to education and skills development has significantly restrained the poverty reduction process. Similarly, Health is another determinant of poverty and promotion of health can have significant poverty alleviation impact. Lack of adequate food and nutrition and ill health and mortality exert negative effects on work, employment and earnings

In essence, number of causal factors has influenced the poverty incidences in Nepal including (a) slow economic growth not keeping pace with rapid population growth; (b) weak redistributive and institutional capacity overall in the part of the government, (c) non-agricultural growth is lacking any significant spillover effect on rural poor, (d) low productivity and slow growth of output in agricultural sector, (e) weak social and economic infrastructure such as education, health, drinking water, food security, transport and energy leading to inadequate access of poor to the means of escaping poverty (ADB, 2001)

Poverty Reduction Initiatives

Employment promotion and poverty reduction were the development agenda, spelled out directly or indirectly, of number of government policies and development plans since 1950s. The abolition of “*Birta*” agricultural land and nationalization of privately owned forest were some of the examples of anti-poverty components of the 1950s. Similarly, the civil code against the case-based discrimination, the highway construction projects, introduction of agricultural extension and village development initiatives, introduction of multipurpose schools to address the employment and earning needs of the youths and promotion of cottage small industry development and expansion were some of the notable pro-poor initiatives of 1960s. Moreover, land reform initiative, which imposed a ceiling on land ownership and established the ownership right of tenant to a portion of land tilled was also a revolutionary move toward anti-poverty intervention.

During 1970s, the new education system plan (NESP, 1971) promoted mass literacy, schooling across the country, vocationalized the school curricula to prepare student for employment, developed technical institutes (Institute of Engineering, Institute of Medicine, Institute of Agriculture and Institute of Forestry) for the preparation of middle and higher level technical workforce, the regional development initiative responding the large-scale regional disparities and sought to prioritize investment for the more under developed regions, and the sizable rural integrated development programs were initiated. These programs had distinct poverty alleviation components.

As poverty has always been an overriding concern in development planning in Nepal, only since Sixth Plan (1981 – 1985) had explicitly stated poverty reduction as one of the development objectives. Basic need approach targeting poverty reduction and technical school system targeting to the poor disadvantaged out of school youth was initiated during sixth plan period. Basic need approach further intensified through a separate plan to reduce poverty during Seventh Plan period (1986 – 1990). This plan envisaged to eliminate poverty by the year 2015.

The poverty alleviation program has been the most prioritized agenda of the Government after the restoration of democracy in 1990. Poverty reduction was one of the main objectives of the Eight (1992-1997) and Ninth Periodic Plan (1997-2002). Agro enterprise development, involvement of poor and disadvantaged in community forest scheme, introduction of microcredit to support for income generation of poor families, expansion of the opportunity for technical and vocational education and training, initiation of Education for All program, promotion of cottage and small industries, increasing the equitable access to primary health services, subsidizes in fertilizer to support small farmers, infrastructure development projects to create jobs for the poor people and food for work programs were some noticeable poverty reduction initiatives of Eight and Ninth Periodic Plans.

One of the goals of the Ninth Plan (1993 – 1997) was to lower the poverty incidence from 42% to 32% by the end of the plan period with a long term goal of reducing this to 10% within the coming two decades. The

Ninth Plan intended to reduce poverty through (a) sustained and broad-based growth, (b) development of rural infrastructure, (c) specific programs targeting the poor.

The Tenth Periodic Plan (1002 – 2007) gave more impetus to poverty reduction by adopting poverty alleviation as single development objective of the nation. Therefore, long-term targets and development indicators of all sectors in the nation were set out towards overall objective of poverty alleviation (PRSP, 2002-2007). Keeping in view of the high percentage of poor population, the government adopted various economic reforms programs such as liberalization economy, promotion of trade and commerce, fiscal and monetary, and capital formation, social sector development and poverty alleviation as dealt as the cross cutting issues of the national development. These reforms have brought some positive impact on non-agricultural sector, but the reforms in economic sector are still unable to bring the positive impacts in the field of agriculture where around 70 % populations are engaged. Learning from the past experience of poverty alleviation, the Tenth Plan (2002-2007) has set up following four policy pillars which are the latest governmental strategies to fight against poverty in the country: (1) high, sustainable and broad based on economic growth, (2) social sector development (education and health services) and rural infrastructures, (3) social inclusion and targeted programs for poor people, and (4) Good Governance, (NPC, 2003).

The first pillar focuses on the sustainable economic growth in both agriculture and industrial sectors. The broad-based growth strategy comprises two critical elements: Agricultural development and expansion of on-farm and off-farm employment generation. Agricultural growth is expected to become the anchor for this broad-based economic growth strategy. The second component of the broad-based growth strategy is employment generation through labor-intensive production regimes in both the private and public sectors. Growth in employment is projected to take place through a number of program initiatives.

The second pillar mainly stressed on the development of educational, health and water supply services. The main focus of the third pillar is on mainstreaming gender and deprived communities in the national development process. The fourth pillar primarily focused on the reforms of public governance. The all these four policy pillars at the same time are equally essential for improving the lives of the poor, mainstreaming very poor marginalized groups, and for promoting inclusive development. In implementing these four-pillar strategies of poverty alleviation, it gives the stress on the strategic cross-cutting approaches with regard to redefining the role of the state, limiting the government intervention, promoting private sector to play a leading role in employment and income generation, working together with NGOs, INGOs and Civil Society in complementing government efforts of effective service delivery to the poor people. The priority was also on the promotion of community participation in the management of pro poor activities at the local level. Finally, good governance is one of the fundamental pillars for the improvement of the state capacity to deal with poverty alleviation with improved service delivery as a whole in the country.

The Three year Interim Plan (TYP) implemented right after the People's Movement of 2006 had the main goal to prepare a basis for economic and social transformation for building a Prosperous, Modern and Just Nepal. The main objective the TYP was to realize changes in the life of people by reducing poverty and existing unemployment and establishing sustainable peace. The main development priorities adopted by the plan were:

Reconstruction and rehabilitation of physical infrastructure, provision of relief, rehabilitation and social integration of people affected by conflict, increase in investment to support development through inclusion of communities, regions, gender excluded from all structures, sectors and processes of development, increase in investment in physical infrastructure supporting agriculture, tourism and industry in order to revitalize the national economy, development of electricity, roads, irrigation and communication, and increasing investment in education and health for human resource development were the priority areas set by the TYP.

The tenth Plan and subsequent Three Year Interim Plans were guided by the Millennium Development goals in which Nepal also expressed commitment among 189 countries in 2000 to meet these goals with the aim of bridging peace, security, development to all people. The Millennium Development Goals (MDGs) (GON/UNDP, 2010) are based on fundamental values such as freedom, equity, democratic governance, the rule of law, respect for human rights and peace and security. MDGs also recognize the interdependence among growth, poverty and sustainable development. "Eradicate extreme poverty" is one of the eight goals of MDG.

A recent progress report (GON/UNDP, 2010) stated that the target set in TYP to reduce poverty level to 24% by July 2010 have been met and the strategies and policies adopted for development in general and poverty reduction in particular have been largely successful. However, assessment of variation in poverty incidence geographically and socially remained the same in 2005 and 2009. The 2009 assessment indicated that 95.5% of poor people live in rural areas and incidences of poverty in rural area is 28.5 percent which is almost four times higher than that in urban area (7.6 percent) (CBS,2009 as cited in GON/UNDP, 2010). Similarly, significant variation was found in geographical regions that the high mountains and western hills have a higher percentage of poor than Tarai and Eastern part of the country. Analysis of poverty gap index which explains the depth of poverty indicated that more people are closer to the rising above the poverty line in 2008 than in 2000. This information reveals that the poverty reduction initiatives adopted in TYP has resulted in positive effects.

Remittance, increased budget in poverty reduction and contribution from I/NGO sector were reported the main contributor of poverty reduction during TYP period. For example, in 2008/09 figure for Nepal's remittance was 290.70 billion accounting for about percent of national budget (MOF, 2010). Over the past five years, the government allocated an average of 43.7 percent of its total budget each year, directly to poverty reduction projects. In addition, it was also estimated that INGOs and NGO spent an average of about 100 billion Rupees each year for programs and projects that contribute to the poverty reduction.

During TYP period, the government gave special emphasis on social protection programs and supported these programs by increasing budget allocations. Provision for and distribution of cards to all eligible poor people for subsidized goods and services, increased social security allowances for old people, single women, people with disabilities, Dalits, people from Karnali and the remote areas, increasing food storage, and continuation of previous social safety programs are some initiatives. Similarly, free skill development opportunity, scholarship quota for education and training and foreign employment, supports for non-formal education and income generation quota reservation in government services for people from disadvantaged communities also fall within poverty reduction initiatives of TYP.

Almost similar development aim of reducing poverty and bring it down to 21 percent with more emphasis on poverty reduction, employment creation, removing all forms of inequalities and improving overall living standards of people, the Three Years Plan (2011 – 2013) set its objective to promote employment-oriented inclusive economic growth that contribute to the poverty reduction and stabilizes sustainable peace and provide the experience of change in the lives of people.

The Government of Nepal in its recent Three Year plan has adopted following six different strategies (NPC, 2011) as to achieve the objective of generating feelings of actual change among the people by bringing down the current situation of unemployment, poverty and inequality, and support for stabilization of sustain noble peace in the country:

- 1) attain employment and poverty reduction oriented sustainable and broad based economic growth on collective efforts of government, private, community and cooperative sectors;
- 2) support the foreseen federal structure of the country and develop physical infrastructures that support the inclusive and judiciously equitable economic growth;

- 3) give emphasis to social justice and inclusive development to attain sustainable peace;
- 4) Provide support to the country's socioeconomic transformation through the enhancement of economic and social services;
- 5) make effort for result oriented development by ensuring good governance and making service delivery more effective; and
- 6) Improve economic growth and stability by mainstreaming private, community and cooperative sector development and industrialization, trade and service sectors with the country's development initiatives.

Some Notable Initiatives in Poverty Reduction

Several poverty reduction programs are implemented in Nepal through government or non-governmental sector. Several liberal supports are made available to these programs by international donor communities. Supported by several funding sources and executed by unmanageably large number of organizations, agencies and institutions throughout the country, it has been difficult to keep track of all poverty reduction initiatives recently in operation with objective of poverty reduction through skill development are as follows:

Programs Under MOE focused on Employment and Poverty Reduction

New TEVT Policy for Pro-poor Development. To make TEVT instrumental for poverty reduction and skill development for economic prosperity a new TEVT policy was initiated in 2007. This technical education and vocational training (TEVT) and skill development policy is part of process of reforming the education and training system for Nepal, where more emphasis is laid upon (a) creation of entry level skills and competencies of all students (b) enhancement of employment potentials and earning capacities of under privileged, disadvantaged and marginalized groups in society, (c) integrated development of human resources from basic level to advanced levels to meet technological and business requirements (d) responsiveness and competitiveness of the workforce in globalised and liberalized economies and labor markets (e) strengthening lifelong learning and continuing education opportunities for adult workers with more pathways to occupational careers and enhanced general education achievements, and (f) and ensuring sustainable financing to promote and maintain skill development initiatives. Integration of occupational and skill development component into secondary level education is envisaged as one of strategies for expanding of skill development opportunities for all in this policy.

Skills for Employment Project (SEP)

Government of Nepal with the loan assistance of Asian Development Bank (ADB) has implemented **Skills for Employment Project (SEP)** under Ministry of Education and Sports(MOES). Implementing agency of this project is Council for Technical Education and Vocational Training (CTEVT) in cooperation with Department of Cottage and Small Industries (DCSI), Cottage and Small Industries Development Board (CSIDB) and Department of Labour and Employment Promotion (DOLEP)with the goal of promoting poverty reduction stability by increasing engagement in wage and international employment, and self-employment. The total budget of the project is estimated at US \$ 25 million. Main objectives of the project are to: (1) increase access in Market Oriented Skill Training (MOST) particularly of women, Dalits and the disadvantaged groups;(2) strengthen the capacity of key agencies to enhance their relevance and short-term training quality, (3) to enhance access of disadvantaged groups to the TEVT system, and (4) to develop and articulate the new TEVT policy.

The project delivers two types of trainings, (i) Community based training and (i) Center based training. All the training programs are free of cost and stipends are provided to the low income or wage lost trainees. According to the SfE project document, the Project targets the poor and will have approximately 60% of the trainee beneficiaries representing women, *Dalits*, or disadvantaged groups, while ensuring that about 50% are women and about 25% are *Dalit*. Inclusion of indigenous groups is confirmed in the (ADB, 2004). Targeting by social grouping, as well as awareness-raising of gender equity and social inclusion issues

among institutions, is expected to contribute to conflict resolution efforts, by addressing some of the primary root causes-poverty and social exclusion. By increasing the capacity in-country for expanded short-term training provision and supporting increased access to short-term training programs through the Project, the unemployed and underemployed, particularly women, *Dalits*, and disadvantaged groups, will have a greater opportunity to increase their incomes.

Expansion of ANNEX Programs and Government Supported TEVT Institutions: The vocationally oriented Annex Program started in 2002 by CTEVT in collaboration with Department of Education offering a technical education program work bound, out of school and disadvantaged youths within the premises of general secondary schools sharing part of the physical facilities and human resources and the management. The Annex program will be continued under the SSRP. Its operation in the schools is based on local initiatives by the school and community and the cost sharing mechanism between the government and the local community.

Integration of TEVT Soft Skills in schools: Piloting of TEVT soft skills in 100 schools has been planned to be consolidated with reviewing and developing curriculum, teacher training, class room delivery processes and competency based assessment system. As the technical education and vocational training component of SSRP aims at providing work oriented soft-skills to secondary school students, the expansion and consolidation of Technical Education and Vocational Training (TEVT) programs require a significant level of resource mobilization for technical capacity building; infrastructural development; and teacher preparation including equipment support.

A separate TEVT Stream Secondary Schools: CTEVT has planned to pilot general and technical streams in community schools.

EVENT Program: The Ministry of Education (MOE) with the support of the world Bank has initiated Enhanced Vocational Education and Training (EVENT) Project. The Project Development Objective is to *expand the supply of skilled and employable labor by increasing access to quality training programs, and by strengthening the technical and vocational education and training system in Nepal.* The project consists of the following four components: (1) Strengthening TEVT Regulatory Activities and Capacity Building; (2) Strengthening Technical Education; (3) Support for Short-Term Training and Recognition of Prior Learning; and (4) Project Management and Monitoring and Evaluation. The ultimate outcome of the project is to make TEVT services accessible to poor and disadvantaged youths residing Mid-Western and Far Western Region.

Community Learning Centers: Community learning centers are developed to provide non-formal education (literacy and post-literacy classes supplemented with skill training supporting the participants in income generating activities. Priority is given to Poor, Women, Dalit, and people from the disadvantage communities

Poverty Alleviation Fund: Poverty Alleviation Fund (PAF) for the purpose of initiating and implementing various sectoral as well as targeted poverty reduction programs that will be implemented via a coordinated and integrated approach. PAF is an institutional initiative to create an autonomous Poverty Alleviation Fund (PAF), with substantial participation from the private sector. The PAF is further expected to work closely with local communities and government, the central government, the I/NGOs and CBOs as well as the private sector. PAF has adopted a demand-led community based approach to alleviate poverty and it encourages poor communities to take initiatives to improve their livelihoods. The work culture of the PAF is to working with poor population very closely as possible. However, the impacts of PAF performance on poverty alleviation have not yet been evaluated as per its objectives.

Youth Self-Employment Program: This Fund was established in fiscal year 2008/09 with the objective conducting self-employment and vocational training programs for unemployed youths by providing them collateral free periodic loans at concessional interest rate through banks and financial institutions for the implementation of self-employment programs and vocational training, with the optimum utilization of

productive labor to bring change in the traditional production system and for speedy growth of the country. The primary objectives of the youth self-employment program is to provide Rs. 200 thousand per person at the maximum as collateral free loan in an easy manner so that economically deprived group, women, Dalits, ethnic and conflict affected people, unemployed youths and people having traditional skills will have opportunity to get engaged in agricultural, vocational and service oriented activities thereby making their lifestyle much easier through their increased income.

Micro Enterprise Development Program (MEDP): The development of micro industry plays an important role in the creation of employment opportunities in rural areas, poverty alleviation and inclusive development. The main objective of MEDP is to develop industriousness in backward and poor target groups and create meaningful self-employment. The Ministry of Industry since 1998 has been conducting this program with the assistance of donor agencies.

MEDP has been implementing programs such as, micro industries establishment and social mobilization of micro industrialists for creating more job opportunities by upgrading the existing micro industries, development of industriousness and technical skills, development of inter-relationships amongst micro-entrepreneurs, their micro-enterprises and micro-finance institutions, development of proper technology and access to market, support and service for upgrading micro-industries for their sustainability, capacity building of the concerned parties and consolidation of monitoring and evaluation system, etc. MEDP has been implementing its programs mainly by targeting women, indigenous groups, *Janjati, Dalit, Madhesi* and backward classes.

Rural Employment Promotion Programs of Ministry of Agriculture: The rather comprehensive 20-year Agriculture Perspective Plan (APP), which has been under implementation since 1997, and which is quite comprehensive in nature, is the principal program vehicle of this broad-based growth strategy. Programs under the APP are expected to address the bulk of rural underemployment and unemployment by increasing cropping intensity, augmenting the area under irrigation, increasing livestock heads and their quality, crop diversification, enhanced commercialization of agricultural products and expansion of agro-based industries. The utilization of labor-intensive technologies in infrastructure projects and cottage and small scale industries, including in the private sector is expected to expand non-agricultural employment opportunities.

Employment Fund, Nepal (DFID/SDC): *“Funded by DFID and SDC Helvetas Nepal’s employment fund provides skill training to economically poor and socially discriminated out-of-school youth. Private service providers help identify the market potential as well as train participants. The payment to the service providers is based on the type of category trained and linked to outcomes: the service provider does not get any payment for those trainees who do not achieve employment.”* The main objectives of the project is to provide skill training to poor and socially discriminated out-of-school youth (18 to 35 years) and ensure their gainful employment; to promote decent work; address the employment needs of youth in order to mitigate social and political instability; address the particular needs of conflict-affected youth, widows, and the disabled, youth as beneficiaries. The project has targeted to train fourteen thousand five hundred young people (18 to 35 years), 57% female, receive vocational training and support, credit linkage and life skills.

Process

- Timeframe: 12 months; three months training plus follow up.
- Private service providers (currently 17, in 38 districts) are selected based on a competitive bidding system.
- A rapid market appraisal is carried out to identify local market need by the service provider.
- Target groups categorized (by gender, caste etc).
- Implementation of training. Mobile trainings for geographically isolated youth groups.

- Post-training support includes market linkage, business counseling and knowledge on labor rights and credit linkage.
- Differential pricing mechanism (see below) ensures that youth from disadvantaged groups are reached.
- Payment to service provider is based on outcomes. The first payment is made after submission of training completion report (40% of the outcome cost), second payment after submitting income verification report at three month of working (25%) and the remaining 35% after completion of income verification at six months of training.

Results: Training schemes using this model proved to be highly effective. The trainees' pass rate (as recorded by the National Skill Testing Board) was 80% in 2009. Similarly the employment rate was very high post-training at 92%. A wide range of training areas have been developed. Trainees working in 49 trades in 2009 included construction, welding, furniture making, embroidery, plumbing, and electricians.

Concluding Remarks

Despite these various efforts of poverty alleviation over the different periodic plans of the state, there was around 25 % population who were living below the absolute poverty line toward the end of the Three year Interim period (NPC 2011). Even those people who are above the nationally adopted poverty line, they are also living with measurable conditions in terms of basic things such as subsistence, cloths, shelter, health and sanitation, and education services. Pro-poor projects and programs are fragmented with little coordination among them. Therefore, coordinated focused intervention is required to create synergy, efficiently utilizing available funds and ultimately reduce the targeted incidence of poverty during the current plan period.

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TVET: Reaching to Unreached

Ram Swarup Sinha, Ph.D.¹

Abstract

The EFA Dakar framework for action (2000) goal third stated, "To ensuring learning needs of all young people and adults are met through equitable access to appropriate learning and life skill programs. The access to basic and primary, secondary and tertiary education increased rapidly in developing world comparison to the developed world in recent decades. Moreover, the children from the poor family pulled into labour market with low level of cognitive skill. But the 21st century presents a radically different economy and society with profoundly implication for TVET due to innovations of technology in developing the workforce. They required the capabilities for lifelong learning, adaptability, awareness and communication. So that the education system in general and TVET in specifically should need reform in terms of structure, function, curriculum and approaches at all levels with demand driven, competency standard, multi-skills, flexibility and participatory governance.

Nepal is a country of diversity from the dimensions of inequalities such as class, caste, sex, status and geographical location. This diverse situation highly affected the education system with inequalities in access, quality and opportunity to the marginalized groups or unreached population. The core policy of the nation and society; whose contribution and participation is least in the national development does not represent their interests. At present thousands of Nepalese are employed in abroad most of them are from poor families and merely three percent only skilled. However, around 35 percent of our GDP is contributing by their remittance. But unreached population have not justifiable access in TVET program less than five percent of total S.L.C. graduates due to cause of poverty, illiteracy, policy and planning and system problems etc. Therefore, enforcement of right to education adaption of decentralized based planning development of effective monitoring, evaluation system with expansion of TVET program in rural areas should be needed in future.

Introduction

The EFA Dakar Framework for action (2000) goal 3rd stated, "ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programs. Therefore, all young people should given the opportunity for ongoing education. For those who drop out of school or complete school without acquiring the literacy, numeracy and life skills. They need must be a range of options for continuing their learning. Such opportunities should be both meaningful and relevant to their environment and needs, help them become active agents in shaping, their future and develop useful work related skills (UNESCO, 2000).

However, the secondary schooling the cornerstone of education for youth suffers from high levels of global inequality. Most rich countries are close to universal secondary school enrolment, though early dropout remains a concern. Developing countries have also been expanding access. But in 2008, Sub-Saharan Africa's GER of 34 percent points to high levels of unmet need. Behind the regional averages, these are large inequalities within the countries. In an increasingly skill-based global economy, higher education systems play a vital role in skill development. Here too, there are large global inequalities, and some of the gaps are widening. Access to tertiary education as expanding more rapidly in richer than in poorer countries. Moreover, children from poor households are for more likely to be pulling into labour market with low level of cognitive skills. The training programs in Latin America, which target low-income families, combine the teaching of basic life skills with technical training, internship and further support services. Evaluation of six

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countries suggest that they have significantly improved employment opportunities and earnings for participants (UNESCO,2011).

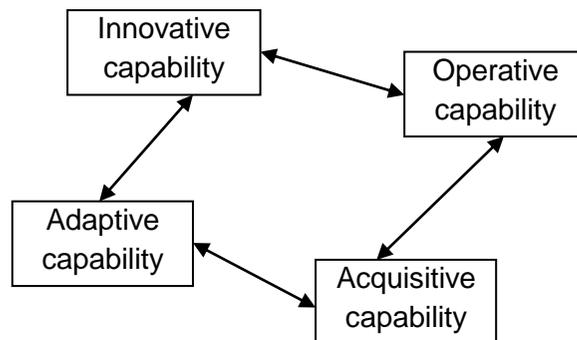
Global context

The 21st century presents a radically different economy and society with profoundly implication for TVET. Due to innovations of technology, a new set of skills will have to be focused in developing the work force; the fact is that the 21st century skills are critical. The TVET system in Asia and the Pacific region needs adaption to key features, which includes globalization ICT revolution, sustainable development and emergence of workers rapid knowledge. Briefly, "Twenty-first century skills combining technology literacy, critical thinking, creativity and mastery of core subject matter are the lifeblood of a productive workforce in today's global, knowledge-based economy. The workforce requirements as given below:

- Capacity for lifelong learning
- Adaptability, practical skills
- Awareness@ global issues, and
- Communication and ability to work collaboratively etc.

The expected human resource capabilities from TVET pass outs are changing very fast the expected capability may be seen as follows:

Human resource capability cycle



Source : Khambayat, 2009

The increasing economic globalization and restructuring in the world political and economic system and the requirement for knowledge and information within those systems educational needs (in terms of structure, function, curriculum and approach) at all levels, especially at the tertiary level have changed. These educational requirements for the workforce of the future are extremely important. In this regard, the quote of Charles Darwin is very relevant. **"It is not the strongest of the species who survive, not the most intelligent, but the ones most responsive to change"**.

Today the world is witnessing the effects of economic slowdown. It has affected every sphere of our life and activity. We often hear people saying that, markets have slumped, more and more people are job losing, early entrants are not getting jobs, companies are closing, sales are not picking up, cash has evaporated from the market, profitability is severely hit etc. and many such things. In these prospects the International Labour Organization (ILO, 2002) has identified a new 'paradigm' for TVET that has particular characteristics. Increasingly TVET is demand driven, emphasizes employability, competency standards, lifelong and learner-focused learning integrated education and training, multi-skills, flexibility in terms of entry and exit points and

often involves participatory governance. This has had the consequences of diversifying the roles and work of many TVET practitioners, with their work being described variously as learning facilitator, work place of industry trainer such diversified roles have required a new focus by practitioners reflecting on their own professional practice and to acquire skills beyond the core teaching and learning competencies (Khambayat, 2009).

Nepalese context

The challenges of meeting the demand for primary and basic education in the developing world and particularly in Nepal it is trying to achieve universal primary education as led to embark on a major exploratory exercise to identify the most suitable education and training system for the recent era. The system envisioned would include formal, non-formal with a focus on Technical Vocational Education and Training (TVET) and other learning and training opportunities possible through diverse modes of delivery. UNESCO mission is to promote education as fundamental rights to improve the quality of education to stimulate experimentation, innovation and policy dialogue. The interim constitution of Nepal, 2007 envisaged in article (17) as:

- a. every citizen shall have the right to get basic education in its own mother tongue as provided in the law.
- b. Every citizen shall have the right to get free education up to secondary level as provided in law.
- c. Every community residing in Nepal shall have right to preserve and promote its language, script and culture, cultural civilization and heritage.

The above descriptions show the vital importance of TVET program for the resolve the problem of unemployment is one of the major problems of the developing and least developing countries like Nepal. However, there is a great inequality within the inter and intra countries. Focusing on Nepal, it is a harrowing situation and there is more than 80 percent of job security for students of technical education. However, less than three percent of students join technical education after S.L.C. while more than 95 percent go for academic courses. At present thousands of Nepalese are employed in abroad most of them are from poor families and merely three percent skilled. However, around 35 percent of our total GDP is contributes by their remittance.

Unreached population in education categorized, as marginalized groups of people within the society whose interests are not represent by the core policy of the society. Because of their inferior or disadvantaged position with respect to the socio-economic, political and cultural power structure of society. They have less influence on government policies on national development. Some salient features of the unreached groups are:

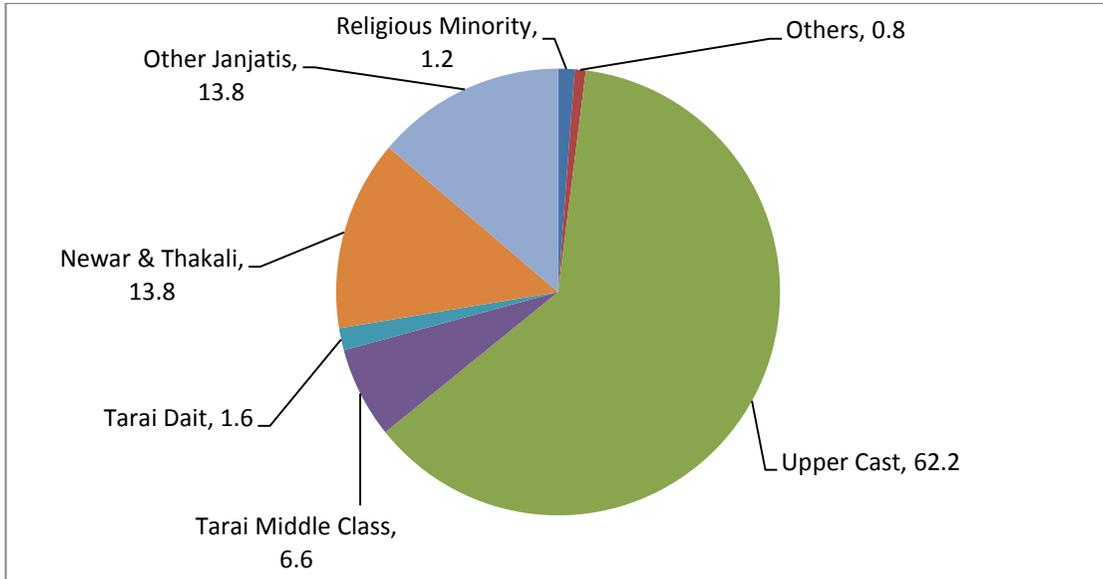
- Whose interest is not safeguarded by the major social policies
- Who falls under the lowest status within the social power structure
- Who displays least participation in development activities of the nation
- Who stands at the end of queue to test the fruit of the national development
- Whose participation in decision making process is nominal
- Who falls under the category of extreme poverty

They are the last groups to benefit from the fruits of national development (Sinha, 2007). Nepal constitute diversity in the social structure dimensions of inequalities such as class, caste, sex, status and rural urban differences place people in different strata of society, it affects their aspiration, access and achievement towards the education. Society offers due respect to its elite in terms of comfort, honour and self-respect. Individuals in social strata prefer and predominantly consume high or elite culture and individuals in lower social strata prefer and predominantly consume 'popular or mass' culture (Bhandari, 2010). Such preferences

may impact on the degree of access to education including job opportunities. Regarding professional and professional workers in Nepal the figure given below may clarify the scenario.

Caste wise professional and Technical workers

(In percent)



Source: Sinha, 2067

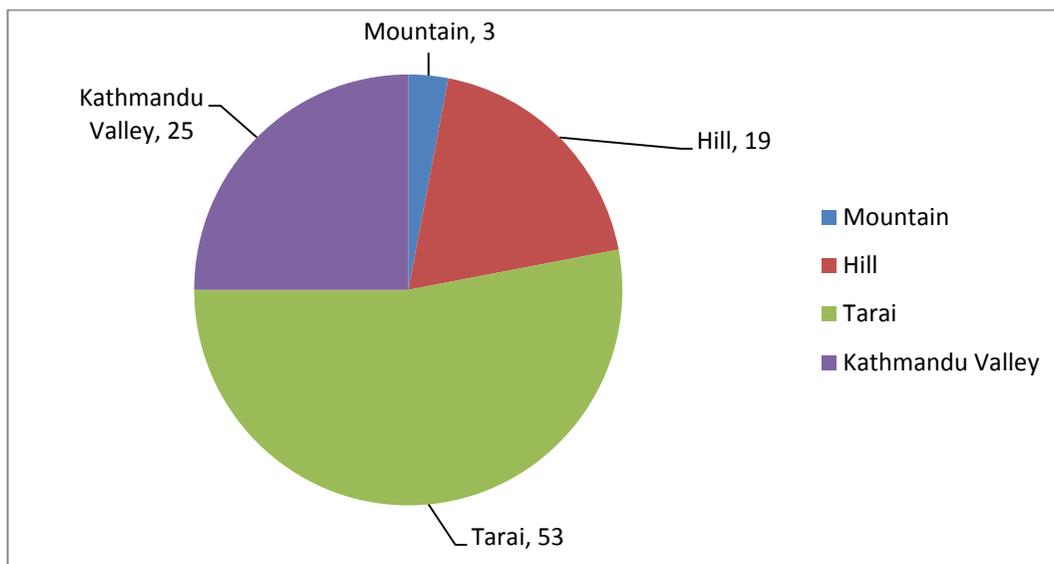
Above figure shows that the highest participation of Upper Caste is 62.2, Tarai Middle Caste 6.6, Newar and Thakali 13.8, Other Janjati 13.8, Religious Minorities 1.2, Dalit 1.6 and Other only 0.8 percent in professional and technical works.

Another dimension of inequality in education for unreached groups especially in TVET is the place where people live. People have different levels of access and opportunity according to their residence. The study conducted by Roscino and Crauly (2001) in United States should showed that students who are living in the rural areas, exhibit lower level of educational achievements and higher likelihood of dropping out of school than students living in non-rural areas. Alive example shows that many constituted and affiliated TVET schools have been conducted short-term vocational training to three years diploma level programs or TSLC or Annex programs are mostly running in Tarai and Kathmandu valley as given below:

Ecological zone wise distribution of TVET programs and institutions

Geographical Region	Constituted			Affiliated			Annex		
	TSLC	Diploma	Total	TSLC	Diploma	Total	TSLC	Diploma	Total
Mountain	3	1	4	3	1	4	2	0	2
Hill	5	4	9	30	16	46	12	0	12
Tarai	4	9	13	73	86	159	16	0	16
Kathmandu Valley	1	1	2	24	63	87	0	0	0
Total	13	15	28	130	166	296	30	0	30

Source: CTEVT, 2010



Source: CTEVT, 2010

The above chart shows that the large number of TVET providing institutions (78%) lies in Tarai region and Kathmandu valley, which are well resourceful areas of Nepal. On the other hand, only 22 percent of institutions are running in mountain and hill area, where the most unreached (disadvantaged) people live. On the top of that only 3 percent of total institutions are providing services in mountain region (Neupane, 2010).

The status of women in TVET is not encouraging. The gender distribution of technical education graduates by location of technical training providers. The public institutions are establish both in rural and urban areas where as the private institutes are in urban areas only. There are 57 percent male and 43 percent female graduates in rural public schools. In urban schools, the percentage of female is higher in private schools than in public schools. The percentage of female graduates is higher in rural areas than in urban areas. There are 22 percent female in private and 1 percent in public schools (Lamichhane, 2010).

Form the point of view of gender party in tertiary education of Nepal the enrollment of men's is higher in comparison to the women, similarly, the participation of unreached groups in technical higher education is more serious.

Women's participation in higher technical education

(in percent)

	General	Technical
Total women	42	24
Brahmin, Chhetri women	41.7	21
Newar women	50	32
Janjati women	43.3	33.8
Madeshhi women	25.3	14.4
Dalit Women	31.4	18.4
Muslim	27.4	9.0

Source: Sinha, 2067

In total, the participation of women is 42 percent in general higher education and only 24 percent in technical education. From the point of view of social strata, Muslim women participation is only 9 percent in higher technical education. The gender disparity in technical education is as from the perspective of person with disabilities (PWDS). The national federation of disabled Nepal pointed out that only 1.18 percent of PWDS is engaged in government and private sector job. National Planning Commission's survey report stated that only 2.9 percent (only 27 PWDS over 14 years age group out of 917) PWDS who have access to some kinds of vocational training and 80 percent are economically not active and dependent to their family (Prasai,2011)

Issues and Challenges

Some crucial issues and challenges related reaching to unreached in TVET program are stated below:

- Poverty and illiteracy
- Policy and strategies confusion/ Lack of inclusive policy in TVET for reaching to unreached
- Social/cultural issues
- poor access to technical education/training
- Low quality of TVET
- Inadequate and insufficient funding
- Centralized operation and poor management
- Systematic problems
- Lack of equity in access, quality and opportunities
- Pro-poor and pro-gender TVET planning
- Resource mapping mechanism
- Opportunity cost provisions
- Limited awareness amongst unreached population
- Lack of guidelines to promote public private partnership
- Not enough clarity in the role of local government
- Increasing gap in quality of education between the rich and poor, constitute and affiliated TVET institutions as well as rural and urban population
- Inadequate institutional provisions for education and educational support for marginalized groups affected by disaster, conflict and post conflict and living in different geographical areas
- Global economic crisis inhibiting the government and development partners (DPs) to maintain or enhance the level of financing in TVET.

Way forward

Viewing over the above issues and challenges following steps should have to be taken.

- Enforce the right of education for all through justifiable legal provisions.
- Examine the main cause of exclusion and barrier to TVET for unreached groups.
- Prepare a disaggregated database and adopt a decentralized based planning ensuring all stakeholders' participation.
- Reform the educational policy viewing reaching to unreached.
- Develop effective monitoring, evaluation and feedback system.
- Establish network and collaboration mechanism with other sectors within the government system.
- Undertake a comprehensive assessment of resource requirement with specific reference to reaching to unreached.
- Allocate at least 4 percent of education budget for TVET.
- Mobilize resources through external funding.

- Urge the development partners and corporate sector to increase/provide funding to ensure realization of EFA goals by 2015 addressing reaching to unreached issues (Dhaka, 2009).

Conclusion

Knowledge economy demands global standards of quality and ethical values. As a result, the role of TVET is going to be dramatically different in 21st century to address the demand of world labour market to develop workforce. Nepal is a country of diversity from the point of view of ethnicity, language, religious minority, social cultural structure, caste, class, sex, socio-economic status, rural urban residence and family background etc. Therefore, the educational inequalities for unreached population are deeply rooted in the basic institutions of Nepalese society. However, this is not only the case of Nepal but also of many other developing and least developed countries. Thus, any specific suggestions or recommendation provided for remedy may not work as a panacea. Because, these inequalities case borne from the society itself, So, it would be changed gradually within a holistic social and national changing spectrum.

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Prospects and Challenges of TVET Teacher Education in the Context of Nepal¹

Bhawani Shankar Subedi, Ph.D.²

Abstract

The extent of quality delivery of the programs and services depends upon the demonstrated ability and willingness of the trainers and managers of training institution. Professional expertise does not just happen. It has to be developed. Commitment of the trainers determines the extent of success in providing training and job placement of the program-graduates. It is because the efficiency and effectiveness of TVET programs is measured by the extent of employment or self-employment of the graduates, quality of Technical Vocational Education and Training (TVET) programs and services depends upon the access, equity, efficiency and relevance of such programs and services.

Training is a means to an end. It is not an end in itself. Prospects and challenges of preparing adequately skilled and motivated TVET educators for the present and also for the future are immense and need attention. The purpose of skill-based TVET is to prepare individuals for livelihood with potentials of earning for their living by being engaged in specific occupation/s in the formal or informal sector of economy.

This paper highlights efforts made and approaches followed by the Training Institute for Technical Instruction (TITI) Nepal with reference to training and development of TVET educators. It includes range of services, customer bases, program areas and contexts of institutional operation. Although programs and services as they currently exist illustrate good practices, they are still inadequate. The emergence of TITI in 1991 and the innovative training practices during the past two decades have gained momentum but more is yet to be done in this direction.

Background and Context

Council for Technical Education and Vocational Training (CTEVT) was created by special Act of the parliament in 1989 with the mandate to formulate policy, coordinate among TVET providers, ensure quality standards by means of skills tests and certify the graduates. The same Act envisaged the establishment of the Training Institute for Technical Instruction (TITI) as a separate semi-autonomous institution mandated for the training and development of TVET educators, including principals, instructors, curriculum developers and community facilitators with a mission to improve the quality of technical education and vocational training in Nepal.

During the past 30 years of its history, TVET system of Nepal has made a considerable progress. However, due to rapid growth of population (30 million in 2011), prolonged socio-political conflict and subsequent stagnation of industrial-economic growth- employable skills training and education opportunities have reached only a small segment of population (10-12% of 15 to 29 years) with less than 4% of the total national education budget allocated for TVET programs and services. The momentum is now changing. Multiple donors and stakeholders have focused on TVET programs and services below bachelor degree levels with more than 350 private technical training providers, 44 annex schools with one or more TVET programs and 23 constituent campuses of the CTEVT itself. All these have an intake capacity of about 50000 youths and adults in the TSLC and Diploma programs alone. A wide range of occupation-specific short-term courses (of 1- 6 months) are being offered for job-seekers in Nepal and abroad.

¹ This paper was presented by the author in the International Conference on 'Preparing TVET Educators for the Next Generation'- December 12 – 13, 2011, Kuala Lumpur, Malaysia

² Author is the Executive Director at TITI

Additionally, at least four universities are offering technical education programs of undergraduate and graduate levels. The number of TVET educators has thus reached over 8000. Professional development and training of these educators has become eminent. Training Institute for Technical Instruction (TITI) is the only institute for the training and development of TVET trainers and professionals with scope for future expansion and innovations in its programs and services throughout the country and beyond.

TVET Policy and Teacher Development

Nepal government's TEVT policy (2007) focuses on five elements: expansion, inclusion, integration, relevance and sustained funding to ensure that the TEVT market can take off. Skills for employment project (loan 2277-Nep, 2004-2011) supported by ADB and implemented through the council for technical education and vocational training (CTEVT) aimed at increasing market oriented short term training to access 80000 unemployed persons within the last 5 years in Nepal. This project is currently phasing out with 'satisfactory' rating by Asian Development Bank (ADB, 2011).

Available information (CTEVT, 2005; CTEVT, 2006; ILO 2001) revealed that access to technical education and vocational skills training is limited, especially for the poor, women, *Dalits*, and disadvantaged, and the quality of such education and training is variable and often not linked to market needs. Overall, existing institutions lack the capacity to fully serve the needs of market oriented technical education and vocational skill training. It has been realized that new measures are required to substantially increase the number of people who acquire sound technological knowledgebase and skills that lead to incomes and productivity. Strengthening technical education and training sub-sector to deliver more relevant and market-oriented education and training is one of such measures.

Nepal economic growth assessment (USAID, 2008), in its first two of the top five priority recommendations enlists 'vocational and skill training for poor and disadvantaged youth for local employment and migration' and 'labor intensive work programs aimed at the poor and excluded groups to provide infrastructure maintenance and other needed public works.' Likewise, national action plan for youth employment Nepal (2008-2015) has taken four Es framework- employability, equality, entrepreneurship and employment generation- as propounded by the youth employment network. Likewise, Save the Children Nepal in its mid-term evaluation report of the youth and employment project (ODW 2007-2011) recommended new impetus to vocational skills training for youths with due attention to what happens before, during and after all aspects of vocational skills training (ODW project midterm evaluation report 2009).

One of the objectives set by the three-year interim development plan (2008-2010) of Nepal states that the objective of national action plan for youth employment is 'to enlist the active participation of all Nepali youth in national reconstruction and socio-economic transformation by providing them opportunity to develop their capacity and potential.' However, an eminent inability to find employment is likely to create a sense of vulnerability and uselessness among youths. 'Vocational skills for youth employment and livelihood improvement' support could be an appropriate intervention to protect and empower youths in terms of capacity to earn a living by getting engaged in productive occupations. Education, gender and caste divides among youths are important factors that need to be taken into account in any effort to facilitate employment. Given the gravity of problems in equipping these youths for labor market, and generating employment opportunities that absorb youths, general employment policies and programs may not be sufficient. Hence, there is a need to focus with targeted interventions to address the youth specific issues and potentials of employment, especially in the informal sector of economy.

Nepal [TVET](#) and Skills Development [Policy](#) – Outline*

Key Messages	Key Policy Areas	Favoured Measures
<p>to citizens: every Nepalese shall be entitled to at least 3 months of training for employment free of charge; beyond that an increasing array of life-long learning opportunities will be available on a fee-paying basis</p> <p>to training providers: all businesses and institutions, small or large, private or public, commercial or charitable, will be encouraged and supported to offer skills development for school leavers and the national workforce</p> <p>to the business community: the supply of workers, competent and confident in their occupation will be massively increased thus enhancing national productivity</p> <p>in essence: development of a strong and functioning market for TEVT and skills development</p>	<p>massive EXPANSION of training opportunities</p>	<ul style="list-style-type: none"> • deregulation, autonomy, decentralisation • free start-up support to emerging providers • outcome quality assurance (in line with NVQs) • performance comparison, transparency and quality marks as elements of customer protection
	<p>INCLUSION of and ACCESS for all citizens who need training</p>	<ul style="list-style-type: none"> • stipends (for tuition fees and subsistence allowance) especially for disadvantaged groups of people • recognition of prior learning / open assessment • entry level occupational standards • preparatory & support courses to promote mainstreaming
	<p>firm INTEGRATION of various training modes and pathways</p>	<ul style="list-style-type: none"> • Vocational Qualifications Framework as a bracket for formal, non-formal and informal training and learning • bridging courses into general education • promotion of typical occupational career ladders • and career guidance for the workforce as elements of life-long learning
	<p>enhanced RELEVANCE of courses and competencies</p>	<ul style="list-style-type: none"> • licensed trainers with industrial exposure • curricula based upon occupational standards • hands-on training (on-the-job & projects) • independent assessment and certification
	<p>sustained FUNDING sources and mechanisms</p>	<ul style="list-style-type: none"> • massive increase in public funds • fees for all training measures beyond 3 months • concerted donor assistance • TEVT development funds on district level • explore contributions from former stipend recipients

(* Currently, this policy outline is being replaced by a more comprehensive TVET policy for Nepal, with restructuring of the existing framework and functional/operational structure. The new document is yet in its formative stage and has not yet been officialized).

The need for training and development of TVET educators is likely to increase with the advent of EVENT (Enhancing Vocational Education and Training) project of the World Bank recently started (July, 2011) and Asian Development Bank's upcoming Skills for Employment Project (SEP II) in addition to the existing TVET programs and services.

Development Interventions in Educating and Training TVET Educators

By the Act of CTEVT (1989), the Training Institute for Technical Instruction (TITI) was created as a semi-autonomous institution with separate bye-laws mandated for the training and development of TVET educators in-country and the region. It's vision stated "TITI is a centre of excellence for TEVT trainers and managers training in developing countries in Asia" whereas its mission states "Training is our business. The mission of TITI is to improve the quality of technical education and vocational training in Nepal".

The development interventions initiated by the government as well as non-government agencies characterize critical weaknesses at different phases of the training cycle. Without involving employers and other relevant stakeholders at all phases of the training cycle- analysis, design, development, implementation, evaluation- training becomes more supply-driven and less market oriented. Thus, by effectively involving partners and stakeholders, quality and relevance of training can be improved.

Linkages between training and employment or self employment can be promoted by means of designing and offering need-based courses for the most appropriate persons identified and included as trainees. Most training interventions fail primarily due to what employers expect from the workers and what they are trained for, especially in the informal sector. Employers in the informal economy pay workers for the actual work performed, not for being listed in the payroll- as is often the case in the government organizations.

Identification of and negotiation with appropriate training providers (institutions or enterprises) that are able and willing to organize and deliver the needed skills training modules for the targeted working youths and adults should therefore be the most critical activity for achieving training's results-employment or self-employment. Access is not just bringing in the youths and admitting them for any training. Access and opportunity to gain employable vocational skills include more than physical presence. It includes an authentic assessment of employers and employees needs that often remain dynamic due to emerging changes in the market economy, industrial and economic growth and affordability and achievability of the training opportunities as well. Objective indicators must be determined involving users, employers and providers in advance to effectively measure the achievement in terms of the extent of increased access and opportunities of employable vocational skills training for youths and adults.

National

Technical Education and Vocational Training (TEVT) activities largely remained in the form of trial and error. This sector characterized scattered and uncoordinated experiments for more than 50 years in Nepal. With the establishment of 29 multipurpose high schools and one vocational teacher training center (NVTC) during 1960s actually marked the formal beginning of TEVT provisions in the country. National Education System Plan (NESP 1971-1976) carried over the essence of the multiple purpose schools by maintaining 400 marks of vocational subjects in the secondary school curricula with the purpose of vocationalizing general education. With the advent of Technical School Plan (1981), many donors and bilateral projects provided technical as well as financial assistance for the growth and expansion of the TEVT programs. At the middle level (technician), the TEVT expanded and maintained continuity in the areas of engineering, health, forestry, food technology and education (Belbase, 1997). However, most of the technical areas and vocational trades remained male-dominated eventually limiting the access of women and other disadvantaged groups to those programs. Policies and practices did not fairly address the needs of those groups in terms of ensuring equity of access to TEVT programs at all levels.

NESP (1971-1976) was the first policy document that explicitly introduced the need for education to be oriented towards TEVT. Consequently, technician education in the field of medicine and engineering received more importance than training of skilled or semi-skilled workers even in those areas. Some of the policy level efforts that were available for review include national development plan documents developed for the country by the National Planning Commission (NPC), High Level Education Commission report (1998), Council for Technical Education and Vocational Training (Act 1989; policy 1999), International Labor Organization (ILO) documents, Employment Promotion Commission (EPC) charter. Those policies attempt to address (or at least reflect) the issue of equitable access to employment oriented technical and vocational education and training for women and other disadvantaged groups.

The tenth five-year plan (2002-2007) of the National Planning Commission (NPC) incorporated the following policy guidelines about training and education, including TEVT, for the target groups that implicitly attempt to address the issue of access and equity for the disadvantaged groups among others:

1. Supply the basic and medium skilled technical human power required for the country.
2. Implement programs on literacy, post-literacy, income generation and on other non-formal education for particularly assisting women and the backward community in increasing their living standards.
3. Develop human resources for the production of internationally competitive skilled human power that supports the national economy for the all-round development of the country; and to use education as a strong vehicle for economic and social development as well as poverty alleviation.
4. To develop sports and youth mobilization programs for producing capable, good and disciplined human power required for the country.
5. Expand and develop quality education required for development of the country, and to make easily available quality primary education for all.

There is still a growing interest exhibited by bi-lateral and multi-lateral donors and investors towards the development of TVET sector in Nepal.

Institutional

Tribhuvan University (TU) of Nepal has been the oldest and used to be the only institution to produce human resources for TVET sector (like other sectors) without specific focus on the needs of TVET educators before the creation of CTEVT in 1989. Three more universities emerged and they all are producing teachers through different programs. However, these graduates fresh from the universities employed as instructors and/or trainers in the TVET sectors needed further training and education, especially occupational skills-upgrading and adult learning strategies. Many institutions, both in the government and non-government sectors, attempted to hit this gap by providing Training of Trainers (ToTs) of various durations and content. Still the need of TVET educators could not be addressed pragmatically. Therefore, the Training Institute for Technical Instruction (TITI) was established and operated since 1991.

There are still limitations and constraints in policy and practices in making TVET programs as effective as they could have been. Training and development of TVED educators has not yet received adequate attention.

1. CTEVT's mandate to coordinate has been undermined by its focus on managing technical schools (World Bank, 1999). This indicates the problem of a dual role by CTEVT. As a training provider it operates in competition to other providers. Thus, its coordination role can be perceived as one training provider imposing its views about training on others (ADB, 2003).
2. The linkage between the TEVT sector and pro-poor development is not one that is strongly founded. TEVT programs implemented by the government agencies seemed to have had a very important positive

impact upon poverty reduction and pro-poor development in its early years (Asher, 2003). However, reduced annual budget from the government pressed the training providers to reduce unit cost, to decrease the duration of training and to increase training fees. Additionally, entry qualifications were raised for recognition for employment of graduates in the formal sector. Eventually, TEVT programs in the public (and more so in the private) sector are getting less accessible for the poor and disadvantaged groups. This situation challenges the policy to open up TEVT programs for a wider segment of population including disadvantaged groups.

3. Female employment has increased but most of the women are still in the agriculture sector working as paid or unpaid workers (Sharma and Dhungel, 2002). In terms of human capabilities and income, women lag behind men and the situation of women who belong to the disadvantaged groups is the weakest (UNDP, 2003). This situation poses problems limiting the equity of access and inclusion of women in non-agricultural economic activities that demand employable technical skills and knowledge.
4. The other hard hit group of poor consists of Dalits (Kami, Damai, Sarki...). Dalits make up 16 percent of the total population (CBS, 1995). Almost the entire population of Dalit woman is estimated to lie under the poverty line (ADB, 2003).
5. Opportunities in the TEVT sector for the school dropouts and failures below class 10 are limited. An average 65 percent of those appearing in the SLC examination fail every year. However, many of the formal training institutions do not receive appropriate trainees who could meaningfully use their skills for employment. This indicates mismatch between the type of skilled labor pursued by the enterprises and the kind and quality of training imparted by the technical training providers (Pandey and Pradhan, 2002). There are weak linkages or no linkage at all between the labor market and the TEVT training providers (Sharma, 2002).

Departmental

Moving towards the vision of becoming a 'centre of excellence' and to address the mission of 'improving the quality of technical education and vocational training', the Training Institute for Technical Instruction (TITI) has developed its strategic plan and programs responding to the emerging needs of training and development of TVET educators in Nepal and elsewhere. Short term courses and long term programs are offered on regular as well as customized basis- on campus, off campus and abroad.

Programs are clustered into four categories based on types and duration- Instruction, Management, Curriculum and Community Development. Courses under the Instructional program, for example, include the following:

- Workshop, Lab and Field Instruction
- Classroom Instruction
- Training of Trainers – TOT (K, S, V & E)
- Instructional Media Development
- Technology Based Instructional Delivery
- Active Learner Methodology and many more.

Likewise courses under Curriculum Program, for instance, include:

- DACUM Facilitators Training
- Training Needs Assessment
- Job and Task Analysis
- Training Design and Development
- Training Course Design and many more.

Similarly, course of the Management Program basically include the following:

- Management Skills
- Supervision of Instruction
- Facilitation and Moderation
- Strategic Operational Planning
- Program Monitoring and Evaluation
- Project Management and many more.

Whereas, examples of courses under the Community Development Program are as follows:

- Foundation of Community Development
- Community Based Needs Assessment
- Intervention of Community Development
- Community Facilitation and many more.

Additionally, TITI has been conducting four-year Bachelor of Technical Education (B. Tech. Ed.) program with affiliation from Kathmandu University and 12 months Diploma in Technical Instruction (DTI) with emphasis on instructor preparation for specified occupational areas. Currently, the DTI program is being conducted for the second batch of 14 TVET instructors from Bhutan and the third batch is being negotiated for next year (2012). Thus long-term programs of TITI are as follows:

- Entry level certificate (3 months)
- Diploma in technical instruction (12 months)
- Advance diploma in technical instruction (18 months)
- Bachelor of Technical Education (4 years)
- Advance diploma in occupational curriculum development (18 months, being developed)
- Advance diploma in training institution management (18 months).

Best Practices and Modalities of Developing TVET Educators

In addition to ***Trainer Orientation Program Individualized (TOPI)*** and Induction of new trainers on ***Training Delivery Standards*** and ***Instructional Assessment Form (IAF)***, a ***Trainer Development Model*** specifically designed for TITI has been a powerful tool for the training and development of TVET educators in Nepal.

According to ***this model***, a potential trainer when hired, will gradually move towards level 1, then to level 2 and then to level 3. This movement normally takes 10 years for very committed, able and willing individual/s to become a professional trainer. Career ladder in the system also allows vertical career growth for a Trainer (class 3rd officer) to Senior Trainer (class 2nd officer) and then to Consulting Trainer (class 1st officer). This model of trainer development and career progression is working very effectively in the context of Nepal.

(Please refer to the presentation slides for visualized info).

One more model that works well is the ***definition of customer base*** for TITI as an institution. Since TITI was established by the Act of CTEVT (1989), preferential treatment always goes to the CTEVT institutions. Thus, CTEVT as a system is the primary customer as has been defined. Based on market conditions (i.e. emerging needs and demands), TITI can extend its services to other government as well as non-government agencies, projects and individuals seeking the services. During the current years, about 40% of its services are provided to CTEVT's institutions whereas 60% is offered to other agencies and interested individuals in-country and abroad. These services are customized based on proposals, needs analyses and mutual agreements, often won through competitive bidding process. *(Please refer to the presentation slides for visual effects).*

Major Issues and Challenges

To be responsive to the existing and emerging training and development needs of TVET sector educators, it is always emphasized that the Training Institute for Technical Instruction (TITI) should acquire first and then consolidate the following three things:

Capacity Building: Expert trainers tend to leave the institution and newly joining trainers who are transferred from CTEVT or are freshly recruited need to be groomed. This grooming often takes about ten years to be an expert trainer who can operate not only within the nation but also internationally. Without having a provision of multiple ways of capacity building, the system in place is likely to suffer in terms of quality and credibility.

Operational Autonomy: Being a governed owned public sector organization, it is always a challenge for TITI to function effectively as an enterprise. It has gained a considerable momentum in terms of credibility and quality of programs and services. However, the struggle for greater autonomy is always something that the bureaucracy dislikes. To set an example it is essential for TITI to gradually move towards full sustainability and to prove that it can make a difference with commitment and quality delivered to the diverse clients.

Policy for Sustainability: Most organizations in the country have a tendency to collapse eventually after phasing out of the donor support. TITI is proving to be an exception. After complete phasing out of the Swisscontact project support in 2007, the institute has made tremendous progress in the image, income and innovations, and that has been continued. However, weak legal framework for the smooth operation of the institute may hit back while political instability is evident in the country. A strong policy for sustainability supported by any party or government would help safeguard the assets and activities of the institute in the years ahead. *(Please refer to presentation slides for visualized information).*

Issues and challenges being faced

1. TVET programs in Nepal are not yet considered as mainstream education despite growing interest of beneficiaries and stakeholders.
2. For the in-service programs and courses, subsistence allowance and travel costs of CTEVT training participants have not yet been revised (for last 8 years).
3. Increasing drop out and decreasing retention of expert trainers/qualified staff
4. Lack of value addition/recognition of courses/programs within the country.
5. Low participation in training by private/affiliated schools (as most are part-time staff).
6. Inadequate staff development support (national & international training opportunities) from CTEVT to TITI
7. Lack of provision of skill test of trainers and instructors' licensing not yet introduced
8. Trainings not adequately linked to career development and financial benefits
9. Conventional organizational structure, insufficient positions to recruit trainers/experts
10. Shrinking HRD opportunities, no donors to support HRD at the moment
11. Inadequate managerial, operational and financial autonomy for TITI for example
12. Political instability and interference in staffing and resources.

Possible Solutions and Strategic Actions (Future Plans)

1. Clearly define and distinguish between different levels and types of Technical Education (TE) and Vocational Training (VT), pre-employment or post-employment, formal, non-formal or informal-including purpose, entry requirements, coverage and duration of each type. This should help avoid confusions among users and employers.

2. Identify major skill requirements and size of the demand by periodic research and other surveys so that resources are not wasted or duplicated and the persons trained will be able to get jobs in the formal or informal sector.
3. Make special provisions for TVET educators training and professional development
4. Identify training needs in scientific manner, analyze needs and review the status of the needs being met and new needs being emerged.
5. Increase the proportion of national budget of Education for TVET programs. Reward best training providers every year in terms of employment or self-employment of the persons they trained.
6. Involve major stakeholders (trainers, trainees, user communities or employers, workplace supervisors and so on) in the planning, designing and delivery of TEVT services to make them demand-driven rather than supply type.
7. Empower local governments or communities in decision making about TEVT programs so that they are prepared to exhibit their ownership for sustainability of the programs.
8. Create and maintain special funds for TEVT programs to provide equity and access for women and other disadvantaged groups.
9. Generate resources by including contributions from the government, local communities, and NGOs operating in or around the area where the training programs are launched.
10. Conduct mobile types of training programs for enhancing access and equity for the poor and disadvantaged groups.
11. Establish a strong mechanism to follow-up and monitor post-training situation to ensure transfer of knowledge, skills and attitudes from the training environment to the workplace environment. Include major stakeholders in the post training evaluation.
12. Establish a functional Labor Market Information Management System (LMIS) to facilitate the linkage between labor market demands, training and employment perspectives in the formal as well as informal sector of the economy, covering both in-country and overseas.

For the effectiveness and relevance of TVET educators programs and courses conducted by TITI, the following strategies would be instrumental:

1. It is needed to periodically revise subsistence allowances and travel cost of CTEVT training participants as these are in-service training interventions.
2. Give more autonomy to high performing institutions like TITI
3. Make provisions for better incentives. Review policy to retain experts/trainers/staff
4. Make training of trainers mandatory for all training providers including CTEVT's instructional/managerial staff
5. Organize for more internships and exposures for expertise development
6. Conduct more research and development activities, and use the research recommendations
7. Prepare school wise Training Plans and get them sent to TITI annually
8. Ask Principals to encourage transfer of learning from training to workplace for achieving expected change results from training interventions
9. Require TEVT providers to recognize training certificates and value addition for training and professional qualifications.

Conclusion

If training is the solution, what is the problem? The question sounds simple but equally difficult to find an answer. It is because there is not one single solution to human performance problem. In fact, the question keeps reverberating in the minds of people who often try to develop and retain competent individuals and teams for effective and efficient performance of the organizations.

TVET educators training and development is inevitable to cope with the challenges of the future. Training providers are facing both prospects and challenges. Working together with national and international partners could be instrumental for professionalism and quality of performance of the TVET educators. National interest and priorities placed on TVET sector determine the way forward. In most cases, not enough attention is given to what happens before, during, and after completion of training.

Training is the solution to performance problems caused by knowledge and skills deficiencies. This deficiency is the gap between the 'existing' and 'expected' level of knowledge and skills to perform well on the job. Even in situations where training intervention are identified as the solution, problems still remain due to inadequate transfer of learning from the training environment to the workplace environment.

Given the gravity of problems in equipping TVET educators with skills and abilities to be responsive to the labor market, and in generating employment opportunities that absorb youths, general employment policies and programs may not be sufficient. Hence, there is a need to focus with targeted interventions to address the emerging needs of TVET educators for their effective training and development interventions.

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Observation of Technical Education and Vocational Training (TEVT) Approach and Design

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Abstract

The purpose of this article is to envision the future from now, to predict the roles TEVT graduates will play in the future and position TEVT for what lies ahead rather than waiting for time to pass and then trying to respond. Because of continuous change in economic, social and technology, skills and knowledge become quickly out-of-date. The goal of TEVT is to prepare graduates for occupations that are classified above the skilled crafts but below the scientific or engineering professions. It is important to remember that students are driven by passion, curiosity, engagement, and dreams. Bluntly say, with existing models, we are losing the battle for the imagination of our youth. National TEVT systems therefore need to develop the model giving value to the knowledge and skills that will help the workforce become more flexible and responsive to the needs of local labor markets, while competing in the global economy.

Background

General education prepares us to live well. Vocational education prepares us to work well (Snedden, 1910). In the human capital framework, general education creates 'general human capital' and vocational and technical education 'specific human capital' (Becker, 1964). The former is portable across one's life and from job to job, while the later one is not and hence many advocate general education, as more suitable to the flexible labor force that can change task and even the type of work; but the later one has an advantage, imbibing specific job-relevant skills, that can make the worker more readily suitable for a given job and would make him/her thus more productive. Hence both are important, and education systems in many countries therefore include both general and technical/vocational streams of education in varying proportions. The TEVT includes: Apprenticeship Training, Vocational Education, Technical Education, Technical-Vocational Education (TVE), Occupational Education, Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education, etc. (Basnet and Kim, 2010). Several of these terms are commonly used in specific geographic areas.

Vocational education is a social process concerned primarily with people and the work they do in our society; and, in addition to its concern with preparing people for work, it seeks to improve the work potential of the labor force (Barlow, 1971). Evans (1971) adds that vocational education is that part of education that makes individual more employable in one group of occupations than in another. All forms of educational instruction, including vocational education, are devoted to student learning progress (Allen, 1974). If we are to understand sustainable development as a form of development that enhances the economic well-being of all individuals in a community in a way that contributes to social cohesion and democratic values, while protecting rather than jeopardizing the resilience of the natural environment, it is clear that TEVT is a crucial tool for attaining it (Diva). The explosive advances in knowledge, instrumentation, communication, and computational capabilities create a mind-boggling playing field for the next generation. As plethora of challenges, it is important to remember that students are driven by passion, curiosity, engagement, and dreams. Bluntly say, with existing models, we are losing the battle for the imagination of our youth.

Vocational training is training for a specific career or trade, excluding the professions. Preparation for work was a primary motivation behind the early development of vocational education. Vocational training focuses on practical applications of skills learned, and link between education and the working world. Vocational

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education or *vocational education and training* (VET), also called *career and technical education* (CTE), prepares trainees for jobs that are based on manual or practical activities, traditionally non-academic, and totally related to a specific trade, occupation, or *vocation*. Generally, the terms *vocation* and *career* are used interchangeably. Although the concept of career education is larger than that of vocational education, vocational education composes a major segment of the activities of career education. It is sometimes referred to as *technical education* as the trainee directly develops expertise in a particular group of techniques or technology. The goal of technical education is to prepare graduates for occupations that are classified above the skilled crafts but below the scientific or engineering professions. It emphasizes the understanding and practical application of basic principles of science and mathematics, rather than the attainment of proficiency in manual skills that is properly the concern of vocational education.

The expanded concept of career and technical education provides for a planned program of courses and learning experiences that allow students to explore career options, develop academic skills, achieve high academic standards, and prepare for industry-defined work or advanced education. Vocational education can be at the secondary or post-secondary level and can interact with the apprenticeship system. Up until the end of the twentieth century, vocational education focused on specific trades such as, for example, those of automobile mechanic or welder, and it was therefore associated with the activities of lower social classes. As a consequence, it carries some social stigma. Vocational education has diversified over the 20th century and now exists in industries such as retail, tourism, information technology, and cosmetics, as well as in the traditional crafts and cottage industries. Specialties are as diverse as advertising art and design, television production, computer graphics, cosmetology, business and computer technology, auto mechanics, carpentry, masonry, small engine technology, practical nursing, floral design, and urban forestry. Workers in a service- and information-based economy have a greater need for critical thinking and social skills.

Trade schools offer both degree programs and vocational certificates. There are many occupations that require a trade school education, including hairdressing, massage therapy, auto mechanics, plumbing, and carpentry. Trade schools also teach students technological, culinary, and health care skills. Vocational programs at both the secondary and postsecondary levels vary in their quality and effectiveness. While graduation from a good vocational program or trade school can greatly improve one's employment outlook, there are other ways to get specific occupational training.

Tech Prep programs are based on a collaboration between secondary schools and postsecondary institutions to help prepare students for high tech careers in areas such as engineering, technology, applied science, health, and applied economics, and to improve the academic success of vocational students. Tech Prep is a sequenced program of study that combines at least two years of secondary and two years of postsecondary education. It is designed to help students gain both academic knowledge and technical skills. These programs typically lead to either a certificate or an associate's degree in a specific career field.

Vocational education is related to the age-old apprenticeship system of learning. Completing an apprenticeship is an alternative to traditional vocational training. Apprenticeships are most common for highly skilled manufacturing or construction jobs. Apprenticeships combine on-the-job training with classroom instruction. Apprentices are paid while on the job. One reason apprenticeships provide a good alternative to traditional vocational training is that apprentices pay nothing for their education, and are actually paid for the hours they spend learning on the job. In addition, apprentices typically command relatively high salaries when they become journey workers. TEVT is a branch of education that can give its young graduates the skills to do productive work using levels of technology that suit their communities. In this way they can generate incomes for themselves, add to the prosperity in their communities and even safeguard the environment.

There is a diverse pattern of provision of vocational and technical education and training in many countries. It includes at least two major forms: vocational and technical education in formal education systems (lower-secondary and secondary schools, higher secondary but less than college level institutions like polytechnics,

and colleges at tertiary level), and training outside formal system of education (pre-employment training and on-the-job-training). The later kind also includes apprenticeship-training systems, non-formal training centre, enterprise based training, etc. Polytechnics in many countries, industrial training institutes in India, technical colleges in Sri Lanka etc., belong to the post-secondary level (below tertiary level). Vocational and technical education has been an important part of higher secondary education. In several East Asian countries, the emphasis was not on formal vocational/technical secondary schools, but on training institutions and on-the-job training. In many of the countries of the region, employers are also responsible for specific skill training (Tilak, 2002).

With rapid transformation of societies in social, political, economic, technological, and education spheres, there has been a change in the perspectives on the need for and nature of TEVT. New challenges have begun to emerge, and old ones to reemerge. This article provides a brief account of the progress made by Nepal in TEVT, and discusses a few important emerging issues of serious concern and suggest for future policy.

The paper centers on an effort to envision the future from now, to use this knowledge in an attempt to predict the roles TEVT graduates will play in the future, and to position TEVT in Nepal and other south Asian countries for what lies ahead, rather than waiting for time to pass and then trying to respond. It is driven by concern that TEVT students of today may not be appropriately educated and trained to meet the demands that will be placed on the future. Without refocusing and reshaping TSLC and Diploma level technology and vocational courses learning experience, Nepal's TEVT preeminence could be lost. It asks what restructuring of program, reallocation of resources, and refocusing of trainers/ instructors and professional society time and energy are required so that our educational infrastructure can train TEVT graduates prepare to tackle the challenges of the future. It questions how we can more effectively share with students – current and potential our passion for designing systems, structures, and devices to solve problems and our conviction that TEVT is a profession that offers rich rewards for serving the interests of society. This paper focuses on two parts, the first related to development of a vision for TEVT and the work of the future graduates. The second parts examines the TEVT, in the broadest context, and ask what it needs to do to enrich the education of TEVT graduates who will practice in future.

Principles, philosophy and policy

Philosophy, principles, and policy are essential to TEVT. Philosophy makes assumptions and speculations about the nature of human activity and the nature of the world. It also helps vocational educators decide what should be and what should be different. Philosophy has nearly unending points of application to education. It can assist TEVT professionals/educators in making decisions about the future and guide policymakers in developing future policies for TEVT. It asks three fundamental questions: What is real? What is true? What is good? Ontology, epistemology, and axiology are the main business of philosophy. It can provide a conceptual framework for synthesis and evaluation. Philosophy provides a generalized response to four fundamental questions

- What is the nature of the learner?
- What is the role of the teacher?
- How do you decide what should be taught?
- What is the role of schooling in Nepal?

Principles of technical vocational education are defined as generalization that state preferred practices and serve as guidelines for program and curriculum construction, selection of instructional practices, evaluating programs, and policy development (Miller, 1985). It is developed and presented in three major categories: principles and people, principles and programs, and principles and processes. The principles of TEVT are central to the process and purpose of inductively developing a philosophy for TEVT. Policy has an important

relationship to principles and philosophy. It must align with both the philosophic assumptions and preferred practices of TEVT. Policy and law, in some instances, are synonymous- the intent is to create law. It affects how practitioners discharge their responsibilities to the public they serve. Policymakers, then, must understand a philosophy for TEVT. Policy is the medium necessary for philosophy and principles to become operable.

The evidence shows that vocational education emerged as a result of a real concern for youth and of the failure of the schools to provide an educational program that was both attractive to them and fitted to their needs(Miller, 1985). TEVT makes greater efficiency in production and increase the wage-earning ability of youth-both boys and girls- by helping them move from non-educative occupations as unskilled laborers to positions as skilled workers. It can develop better teaching process through which children who did not respond to book instruction might be reached and educated through learning by doing. It can also introduce to the educational and training system the aim of utility, which would take a place in dignity at the side of culture, and would connect education with life by making it purposeful and useful.

Curriculum and Goal

The world is experiencing major changes in patterns of production and trade as well as dramatic innovations in technologies. The relationship of TEVT curricula to the world of work is obvious. In a more competitive economy, productivity, quality and flexibility are more important for the success of production systems than reduced wages. In order to compete internationally, they have to develop their technological and managerial systems. These factors demand that labor be highly mobile and flexible in adopting new skills. This has resulted in the shortage of qualified workers for the new industries and modes of production as well as in the displacement of labor.

The individuals should be the focal point for the activities of TEVT. Guidance and placement should be concerned with helping people; lifelong learning, needs, and special needs address human issues; open to all and sex bias; student organizations are about what people do; teachers are people who serve other people; and a work ethic is about what people value.

TEVT students should be prepared for the world of work not only by having skills that will get those jobs, but also by knowing how to work. They need to know how to apply for a job, how to be reliable workers, how to get along on the job, how to give their best to their job, and how to grow in their work by developing personal skills and abilities. The relevance of curriculum is a major determinant of the employability and the employment potential of the learner. Therefore, curriculum should be adjusted to reflect work force needs and changes.

Relevance is a critical issue in TEVT curricula. Relevance conveys the potential for employment and the ability to meet job requirements. Maintaining relevance in the TEVT curricula is a never ending task. Preparation of individuals for initial and continued successful participation in the labor force is a measure of TEVT's success. At the same time, the curricula of TEVT are a mirror of that success. To measure up to the demand, the curricula of TEVT must be derived from requirements in the world of work.

Developing an awareness of work, coming to grips with job requirements and understanding of self, utilizing occupational information, and developing a positive attitude toward the need for lifelong learning are all complementary to and supportive of TEVT. Learners who participated pre-vocational components of career education prior to enrollment in TEVT should be more adequately prepared to exercise the choices that lead to a satisfactory and- it is hoped- fulfilling life as productive members of society.

The goal of TEVT is making people capable of functioning independently in an increasingly technological world. Because of changes in production processes resulting from technological advances, the nature of the demand for skills, both in terms of quantity and quality, changes. TEVT would contribute to such progress, both by reducing unemployment, through creating employment in the fields of pre-vocational specialization

and self-employment, and by engendering a higher propensity for labor force participation at the end of secondary schooling, improving productivity, and correspondingly resulting in higher graduate earnings. TEVT can establish a closer relationship between school and work. TEVT is also seen as an equity measure. As an antidote to urban-biased elite education, TEVT will promote equity with a rural bias and serve the needs of relatively poor people. TEVT is seen as the answer to an enrolment problem: the tendency of some students (especially lower class students) to drop out of schools without occupational skills -- a problem that vocational training promises to resolve by providing a more interesting and job-relevant curriculum. More specifically, it is believed to be an effective answer to rural problems, "to alleviate unemployment; to reorient student attitudes towards rural society," to halt urban migration; to transmit skills and attitudes useful in employment (Lillis and Hogan, 1983), and as an important measure of development for disadvantaged youth in rural and urban areas.

Within academia, diverse constituent groups have diverse, and sometimes conflicting, goals. In the contemporary academy several of these conflicts are widely distributed and common. A salient example of conflict is that between the goal to improve teaching quality and the goal to reduce costs. The conflicting goals of professional education programs and general education advocates currently are playing out in the negotiation over accreditation standards. The main concern of decision-makers is to put in place education programs that equip learners for full participation in society as productive and engaged citizens. For youngsters completing primary education this may involve livelihood skills development leading to TEVT within the ambit of secondary education. The UNESCO international meeting of high-level education policy-makers in Bonn, Germany, participants concluded that: "since education is considered the key to effective development strategies, TEVT must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development". TEVT should be intricately linked with social, cultural, historical, economic, technical, and political parameters. Hence formulation of sound and effective policies and plans of TEVT requires an inter-disciplinary development approach, treating TVET as an integral part of overall educational planning.

Not Favor by All

TEVT is not necessarily favored by all. There are strong opponents as well. In a seminal oft-quoted work, Philip Foster (1965) exploded the vocational school myth and called it "vocational school fallacy." Foster and later Mark Blaug (1973) clearly argued that vocationalisation cannot be a remedy for educated unemployment: it cannot prepare students for specific occupations and reduce mismatches between education and the labor market; academic streams promise higher wages than vocational streams; accordingly demand for vocational education might not exist, and Say's law that supply creates its own demand might not work. Negative attitudes to manual work on one side, and the less diversified economic structure on the other, are the demand side factors responsible for the low level of enrolment in vocational education in South Asian countries. Furthermore, vocational schooling may create "a sense of second class citizenship among both teachers and taught which militates against effective learning" (Blaug, 1973). With the succinct, clear and powerful arguments of Foster, Blaug and others, it was hoped that the issue was buried. But it refuses to stay buried. Many countries have set ambitious targets as well. For example, China had a goal of expanding vocational education so that at least fifty per cent of the enrolments in secondary education would be in vocational education in near future; India has a similar target of reaching 25 per cent; and Bangladesh twenty per cent.

Training programs have long been criticized for being 'atomistic' – for focusing on the small tasks of an occupation and ignoring the complex mental or cognitive skills that are part of every occupation. Research also shows that the modern workplace is demanding a worker with more cognitive and communication skills. Techniques such as job and task analysis have allowed training programs to focus on exactly what skills are needed on the job. This behaviorist approach has come into conflict with a new "school" called cognitivism. The cognitivists believe that training programs must focus on the mental competencies required for worker competencies such as problem solving, critical thinking, creativity and communications. If the training

program only teaches each specific skills - no matter how well those skills are taught and learned – the students will not have acquired the cognitive skills demanded by the work place.

Organizations such as UNESCO and the World Bank have played a leading role in reviving and furthering the cause of vocational or diversified secondary education. UNESCO adopted in 1974 an important detailed recommendation concerning technical and vocational education, and argued for provision of technical and vocational education as “an integral part of general education,” as “a means of preparing for an occupational field,” and as an instrument to reduce the mismatches between education and employment and between school and society at large. The World Bank’s sector policy paper on education (World Bank, 1974) attacked school curricula as excessively theoretical and abstract, insufficiently oriented to local conditions, and insufficiently concerned with attitudes and with manual, social and leadership skills; and accordingly the Bank also suggested increasing vocationalisation of the curricula of academic schools.

Several developing countries, including countries in the Asian region have a long history of vocational and technical education and training; and they have vocational or diversified secondary education systems. A Vocational Education Act was passed in 1927 in Philippines stating that the “controlling purpose of vocational education is to fit pupils (persons) for useful employment” (UNESCO, 1984). Malaysia established its first technical college in 1906. South Korea and Taiwan placed high priority on special vocational education at an early stage of industrialization process in the respective countries. The very first educational development plan of Pakistan envisaged technical and commercial education as an integral part of general education, with diversification of the secondary education curriculum. The National Education Commission in Bangladesh, appointed immediately after independence, recommended in 1972 the diversification of secondary education from Grade IX onwards. China had long emphasized vocational education in its school curriculum. After 1978, quite a number of government senior secondary schools were converted into vocational schools. Polytechnic institutions, vocational schools, institutes of technical education, and technical colleges figure prominently in the educational systems in Japan, Korea, Taiwan, Singapore and India. Vocational and technical schools received serious attention in Japan even during the 19th century (Yamamoto, 1995).

All countries in the Asian region have, however, not accorded equal degree of attention to TEVT. As a result, they are at various levels of development of vocational education. As the Asian Development Bank (1991), categorized the several Asian countries, and described, Korea stands as “a leading example” of how governments can promote an extensive school-based TEVT; Singapore had developed a “comprehensive vocational training infrastructure,” forging strong linkages between education institutions and training agencies; Indonesia, Malaysia, Philippines, Thailand and Sri Lanka have “fairly developed” TEVT systems – both in public and private schools; the agrarian economies of Bangladesh, Nepal, Pakistan and Myanmar have “patchy” systems of vocational and technical education; and India and China, the two big countries on the globe, suffer from “prejudice against manual work” and hence have “lopsided” education development structures including TEVT. On the other extreme, Japan has the most developed and well-established infrastructure providing school based as well as enterprise based TEVT (Tilak, 2002).

Observation

1. Australia

In Australia vocational education and training is mostly post-secondary and provided through the vocational education and training (VET) system by registered training organizations. The National Centre for Vocational Education Research or NCVET is a not-for-profit company owned by the federal, state and territory ministers responsible for training. It is responsible for collecting, managing, analyzing, evaluating and communicating research and statistics about vocational education and training (VET). This system encompasses both public and private providers in a national training framework consisting of the Australian Quality Training Framework, Australian Qualifications Framework and Industry Training Packages which define the assessment standards for the different vocational qualifications. The states and territories are responsible for

most public delivery and all regulation of providers, a central concept of the system is "national recognition" whereby the assessments and awards of any one registered training organization must be recognized by all others and the decisions of any state or territory training authority must be recognized by the other states and territories. This allows national portability of qualifications and units of competency.

2. Finland

In Finland, vocational education belongs to secondary education. After the nine-year comprehensive school, almost all students choose to go to either a high school, which is an institution preparing students for tertiary education, or a vocational school. Both forms of secondary education last three years, and give a formal qualification to enter university or Finnish polytechnics. The education in vocational school is free, and the students from low-income families are eligible for a state student grant. The curriculum is primarily vocational, and the academic part of the curriculum is adapted to the needs of a given course. The vocational schools are mostly maintained by municipalities. After completing secondary education, one can enter higher vocational schools or universities. It is also possible for a student to choose both high school and vocational schooling. The education in such cases last usually from 3 to 4 years.

3. Germany

In Germany a law (the *Berufsausbildungsgesetz*) was passed in 1969 which regulated and unified the vocational training system and codified the shared responsibility of the state, the unions, associations and chambers of trade and industry. The system is very popular in modern Germany: in 2001, two thirds of young people aged below 22 began an apprenticeship, and 78% of them completed it, meaning that approximately 51% of all young people under 22 have completed an apprenticeship. One in three companies offered apprenticeships in 2003; in 2004 the government signed a pledge with industrial unions that all companies except very small ones must take on apprentices. The vocational education systems in the other German speaking countries are very similar to the German system and a vocational qualification from one country is generally also recognized in the other states within this area.

4. Hungary

In Hungary, normally at the end of elementary school (at age 14) students are directed to one of three types of upper secondary education: one academic track (gymnasium) and two vocational tracks. Vocational training schools (szakiskola) initially provide two years of general education, combined with some pre-vocational education and career orientation, they then choose an occupation, and then receive two or three years of vocational education and training focusing on that occupation – such as bricklayer. Students do not obtain the maturata but a vocational qualification at the end of a successfully completed program. Vocational secondary schools (szakközépiskola) provide four years of general education and also prepare students for the maturata. These schools combine general education with some specific subjects, referred to as pre-vocational education and career orientation. At that point many students enroll in a post-secondary VET program often at the same institution, to obtain a vocational qualification, although they may also seek entry to tertiary education. Demand for vocational training schools, both from the labor market and among students, has declined while it has increased for upper secondary schools delivering the maturata.

5. India

In India, the Education Commission (1964-1966) recommended vocationalisation of secondary education (upper and lower). The National Policy on Education (1986 and 1992) gave renewed emphasis to the introduction of vocational education program in classes IX and X. The significant purpose of vocational education program (VEP) in classes IX and X was to provide students with professional skills which were required in the economy. 70% of the time available was devoted to vocational theory and skill training. Apart from the practical subjects in laboratories and training workshops at the institution, it was planned that strong school-industry linkages develop so that students of vocational courses get an exposure to real work

situations in the industry. Highly skilled professionals were invited to schools to teach practical subjects to vocational students. There was provision for on-the-job training in the evenings during the summer vacations at the end of class XI. Under the existing vocational education program (VEP), infrastructure facilities have been provided for training in vocational skills. These same facilities are going to be used for the school enterprise after ensuring that they are relevant to the operation of school enterprises. With these minimum facilities, the school enterprise is expected to generate its own resources in future. Raw materials are provided through the centrally sponsored scheme. Students learn the skills in the training workshop-cum-productive enterprise, and gain experience in the marketing of products and services. In the design and organization of the program, many parties are given responsibilities. The District Vocational Education Committee (DVEC) including officials from government departments dealing with health, electricity, rural development, backward classes, finance, employment and human resources; and finally, employers' organizations and community organizations involved in providing essential services. The DVEC takes appropriate steps to promote school industry linkage, assesses the strength and weaknesses, and suggests remedial measures. The DVEC has been assigned the task of playing a leading role in devising industry-school partnerships for rural development. As massive investment in activities is going to take place in the areas of rural housing, watershed management, fisheries, agriculture wasteland development, floriculture, food processing, domestic appliances and communication, the school enterprises are expected to exploit these opportunities in two ways: by bringing in new vocations into the system of vocational training and matching these to the needs in rural areas; by acting as one of the bidders for taking up various appropriate jobs from these investment opportunities. These are expected to be accomplished by appropriate linkages and networking with various governmental and non-governmental agencies such as IRDP (Integrated Rural Development Programs), TRYSEM (Training Rural Youth for Self-Employment) and KVIC (Khadi and Village Industries Commission).

6. Korea

In Korea, vocational high schools offer programs in five fields: agriculture, technology/engineering, commerce/business, maritime/fishery, and home economics. The government is now piloting Vocational Meister Schools in which workplace training is an important part of the program. Around half of all vocational high schools are private. Private and public schools operate according to similar rules; for example, they charge the same fees for high school education, with an exemption for poorer families. In principle, all students in the first year of high school (10th grade) follow a common national curriculum, the second and third years (11th and 12th grades) students are offered courses relevant to their specialization. In some programs, students may participate in workplace training through co-operation between schools and local employers. The number of students in vocational high schools has decreased, from about half of students in 1995 down to about one-quarter today. To make vocational high schools more attractive, in April 2007 the Korean government changed the name of vocational high schools into professional high schools. With the change of the name the government also facilitated the entry of vocational high school graduates to colleges and universities.

Most vocational high school students continue into tertiary education; in 2007 43% transferred to junior colleges and 25% to university. At tertiary level, vocational education and training is provided in junior colleges (two- and three-year programs) and at polytechnic colleges. Education at junior colleges and in two-year programs in polytechnic colleges leads to an Industrial Associate degree. Polytechnics also provide one-year programs for craftsmen and master craftsmen and short programs for employed workers. The requirements for admission to these institutions are in principle the same as those in the rest of tertiary sector (on the basis of the College Scholastic Aptitude Test) but candidates with vocational qualifications are given priority in the admission process. Junior colleges have expanded rapidly in response to demand and in 2006 enrolled around 27% of all tertiary students.

95% of junior college students are in private institutions. Fees charged by private colleges are approximately

twice those of public institutions. Polytechnic colleges are state-run institutions under the responsibility of the Ministry of Labor; government funding keeps student fees much lower than those charged by other tertiary institutions. Around 5% of students are enrolled in polytechnic colleges.

7. Nepal

In Nepal schools are planned for only the few who are preparing for college and university rather than the large number who would go into world of work. Schools, however, are failing to prepare women for either role-as home maker or wage earner. They are not encouraged nor prepared to advance into more challenging and rewarding positions. Since the 1980s, the government has established technical schools in different regions of the country. The courses were offered at the lower secondary (those who have completed grade one through five and are above 15 years of age) and secondary levels (those who have completed seventh grade and are over 15 years of age). The courses were three years duration, followed by one year of on-the-job training. Since 1990s, the technical education at the secondary level became the responsibility of the Council for Technical Education and Vocational Training (CTEVT). International assistance further strengthened the infrastructure of technical schools and a tenth grade pass was required to enroll in these schools. The trade schools offer courses of as short as one year, and as long as two and a half years. The CTEVT and affiliated technical schools also conduct skill-oriented short-term training courses and these last between two and eight weeks. Besides the Ministry of Education and NGOs, other ministries such as labor, women and social welfare, industries, tourism, communications, and water resources also provide vocational training in related sectors.

Nepal TEVT is currently undergoing transformation as a direct consequence of fundamental political, economic and social redirection. Efforts should make to find suitable concepts and approaches to tackle the new challenges. In this context the development of modern, forward looking TEVT model and standard is considered to be very important. The creation of market economy structures often brings with it increased and frequently completely different requirements in terms of the general abilities, knowledge and skills required by employers at the basic and middle level. These requirements should be documented in TEVT standards. They will be important guidelines for the staging of TEVT and they shape the TEVT system. Besides methods for defining content and structure, appropriate methods are also needed for the development and implementation of the new model. The new TEVT model should empower people to contribute to environmentally sound sustainable development through their occupations and other areas of their lives.

The challenge for Nepali policy makers is to ensure that both the supply-side players i.e. the government and the private sector, enter into a symbiotic relationship to battle the perception issue plaguing the demand for TEVT. They need to work with each other to create impact on a large-scale to plug the massive human resource gap. The government has the advantage of existing infrastructure, credibility and scale, whereas the private sector is innovative, dynamic with strong links to the industry space. At the same time, industry is recognizing the importance of having skilled workers and is coming forward to actively involve itself – we can see this in the form of Federation of Nepalese Chambers of Commerce and Industry (FNCCI) adopting trade school (Elam Prashikshana Kendra) entering into a partnership with government organization CTEVT. The good news is that TEVT is making its way on to the radar of the various influential bodies that have the power to generate change. There is growing engagement by the Asian Development Bank, DANIDA, World Bank, Swiss Agency for Development and Cooperation (SDC), the Ministry of Labor and Industry, industry organizations like FNCCI, private institutes and various consultants who recognize the importance of skilled and employable youth population.

Conclusion

If a country has skilled workforce, it can attract business as industries based on older technologies relocate to countries where labor is cheaper. Nepali policy-makers would like to see their countries positioned to take

advantage of these opportunities as well. The challenge is to transform young people completing primary and lower secondary education into workers with the knowledge, skills and attitudes to be adaptable, flexible and competitive. But such a workforce could not be developed through the classic TEVT models that focused on specialized workshop skills. Rather, generic 'soft' skills like working in teams, problem solving ability and entrepreneurship are more important for today's industries where specialized skills can be acquired on the job. In fact, prospective employers prefer employees who possess these 'soft' skills so that they can be trained according to the specific requirements of their industry. In Germany, as many as 65% of all young people receive some form of TEVT. These programs impart not only the traditional skills but also the skills that underlie technological innovation because developed countries need to generate new products and services as the older industries relocate in developing countries.

Given the growing dynamics of change in business, industry and society, there is a need for reform everywhere. UNESCO and the international community have set the ambitious goal "to ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programs" (World Forum on Education, Dakar, 2000). National TEVT systems therefore need to develop the model giving value to the knowledge and skills that will help the workforce become more flexible and responsive to the needs of local labor markets, while competing in the global economy. Education and training are rapidly becoming inseparable, especially as the notion of a job for life is being replaced by the necessity for lifelong learning. TEVT systems must also be open and all inclusive to give even the most underprivileged access to learning and training. Because of continuous change in economic, social and technology, skills and knowledge become quickly out-of-date. People who have not been able to benefit from formal education and training must be given opportunities to acquire new skills and knowledge that will give them a second chance in life and at work.

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Challenges of empowering women for the labour market

Women in Nepal: empowered socially but not economically

Siroco Messerli¹

For centuries Nepal has been rather isolated from the rest of the world until the democracy movement in the nineties and the onset of a powerful social dialogue on inclusion and equal opportunities began to challenge ancient traditions and gender-biased cultural perceptions. Following years of political conflict, milestones such as the peace accord and subsequent commitments of the Government to improve the livelihoods of women and indigenous groups as well as the election of the constituent assembly, comprising one third women, raised many hopes.

However, changes on the ground are few and slow as the economic empowerment of women fails to keep pace with the social dynamics. Apart from cast and ethnicity, gender remains a significant factor of poverty. Women lag behind men in most aspects (economic, social, political and legal) and at all levels of society. Rural women work longer hours than men, but receive up to 50% less wages than men, have little control over assets and incomes or decisions affecting their lives. The generally low educational attainment of Nepalese youth is particularly marked among women with over 50% of the girls leaving school at grade 5 or below. Although the literacy rate of women has significantly increased over the last two decades, a significant gender gap remains with less than 50% of the women being literate in comparison to over 70% of men (NLSS, 2011). Almost 80% of Nepali women are married by the age of 20; and nearly 90% of them have had their first child by the age of 25.

An over-proportionate share of female youth works is in agriculture. Due to increasing internal and overseas migration of particularly men from rural areas, the percentage of woman-headed households has doubled over only 15 years to nearly 27% (NLSS, 2011). Although women constitute an estimated 43% of all entrepreneurs, they are still found predominantly in low-growth areas earning lower financial returns than their male counterparts, facing socio cultural obstacles as well as legal, regulatory and administrative barriers.

Imparting skills for gainful employment

Based on previous successfully implemented private-sector led projects in mobile skills training, the Swiss Agency for Development Cooperation (SDC) and HELVETAS Swiss Inter-cooperation initiated in Nepal in 2008 the Employment Fund (EF) which gradually attracted additional funding from UKAid (Department for International Development, DFID) and the World Bank. The objective of EF is to impart skills to annually 15'000 poor and discriminated school drop-outs of the age of 16 to 35 for men and up to 40 for women and facilitate their subsequent gainful wage or self-employment. The project is managed by the Employment Fund Secretariat (EFS) and implemented through over 30 private sector Training & Employment Service Providers (T&Es) which are selected annually in a competitive procurement process.

The main outcome of the project is the improved employability of the graduates whose economic empowerment will contribute to stability and peace in Nepal. On average 80% of the trained youth is gainfully employed with an income above a pre-defined minimum threshold for at least 6 months immediately after the training. Three years after the training, still over 65% of the graduates are in employment. Key elements of the project's approach are the result-based post-financing modality and the labour-market orientation of the

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skills training through Rapid Market Appraisals as well as job counselling and placement services of the T&Es.

Incentives for achieving gender-disaggregated targets

Due to separate project agreements, each donor has its specific funding requirements and gender-disaggregated targets. While SDC and DFID require an equal participation of women and men in the training, World Bank has provided funding under its multi-country Adolescent Girls Employment Initiative (AGEI) which targets exclusively young women of the age of 16-24. The AGEI originated from a commitment made by Bank President Zoellick in April 2008 to promote gender equality and is funded by a multi-donor trust fund which includes contributions of various countries and the Nike Foundation. The objective of the AGEI is to produce sustainable increases in young women's labour force participation and earnings, to provide learning for EF on how to better reach young women and to measure results through a systematic three years impact evaluation.

While all participants in the EF training programme must be from poor families, preferential access is provided to youth from socially discriminated groups and in particular women. Hence, EFS has split its target group into four categories and provides – based on a gender disaggregated outcome monitoring system - decreasing financial incentives to the T&Es. Target groups which are of higher priority for the project but at the same time more difficult to place in gainful employment (such as women or youth from discriminated castes or ethnicity) result in higher incentives for the T&E. Women are grouped in the two highest incentive categories as they are considered to be highly discriminated. The T&E decides itself on which target group to focus based on its own careful capacity assessment

Intentions and realities of training women

Over four years, the EF project has successfully trained about 55'000 discriminated and poor youth and ensured that on average at least 80% of them are gainfully employed after training. Due to the interventions of EF several thousand young women were empowered to enter the labour market and gradually leave poverty. The project's success cases include many unmarried and divorced as well as conflict-affected women who are nowadays sustaining their own lives with gainful economic activities due to the skills training of up to three months duration.

Nevertheless, the T&Es are facing a series of challenges to attract women to training. Traditional and cultural barriers limit the outreach of training announcements to women. Those who are reached may refrain from applying due to beliefs such as women should not work outside the house, attend training or learn skills which would lead to employment in typically male-dominated trades. In any society, social and cultural norms, beliefs and values have a considerable influence on which trade a young woman envisages for her future career. Lamichhane (2010) points out that (apart from the lower basic education levels of women and their responsibility for household chores) occupational stereotypes and the lack of access to information and are mainly hampering access of women to Technical Education and Vocational Training. Through its communication and outreach strategy EF strives to challenge some of these stereotypes by stimulating young women to learn a trade which is typically perceived as a man's jobs but usually provides a better earning. The project stimulated outreach partnerships between its T&Es and women-based organisations which resulted in immediate increases of women participation in training. Other measures such as training announcements by radio and spreading of success stories of gainfully employed female graduates further contribute to the outreach of the project.

However, some of the project requirements unintentionally limit access of women to training. The age cohorts of 16-24 targeted by the World Bank component coincide with the life period when the vast majority of Nepalese women get married (16-22) and have children (16-25). Most women are aged 30-35 by the time their children are at schooling age and would only then be able to participate in training. Based on above

findings, EF has expanded the age bracket for women up to 40 years of age. Furthermore, women have specific needs such as shorter daily training hours, flexible training schedules and short distances from the home to the training venue.

No equal pay for equal work

When women participate in skills training, the T&Es are facing additional challenges to successfully place the female graduates in wage or self-employment. Traditional beliefs and cultural norms often hinder –especially married - women to start-up their own business or access a salaried job. If women manage to access a job outside their home or open a business, then their employment is usually limited to typical women trades (such as tailoring, beautician or embroidery) which are mostly low income earning trades. Out of the 10 highest income earning trades, in which EF is providing training, only two attracted women while seven were dominated by men. Furthermore, several of the female-dominated trades (like for instance brick-moulding, incense stick making and garment fabrication) offer little opportunity for a career and work conditions often do not meet the basic standards of decent work as defined by the International Labour Organisation (Anker et al, 2002). In addition to that, women face in some trades a considerable risk of exploitation and gender-based violence; especially when migrating abroad (for instance as housekeepers to the Middle East). Apart from this, many Nepalese parents do not allow their daughter to get involved in a hospitality trade due to the higher risk of gender-based violence and the negative perception of women working in these occupations by the society.

The project has specified a minimum income level that must be reached by the graduates during a period of six months immediately after the skills training in order to be counted as gainfully employed. EF applies an outcome-based financing model and provides incentive payments to the T&Es only if the graduates are meeting this income threshold. As women are more likely to be involved in part-time work and receive lower salaries than men, the T&Es are more reluctant to include women in their trainings. Additionally, the chances of female graduates to be employed immediately after training are reduced for those women who have no citizenship certificate and thus cannot receive the official skill test certificate. The project has reacted to this challenge by supporting particularly Muslim women and female trainees in remote regions to apply for the citizenship certificate already during the training.

Encouraging women to challenge stereotypes

Accessing a salaried job or starting a business requires significant levels of self-confidence. Arguably more time and effort should be allocated to impart soft skills to female trainees (such as communication, gender awareness, knowledge about labour rights etc.) while the technical skills can still be deepened on the job. Realising the importance of soft skills, EF has developed a specific soft skills training package for young women in order to strengthen their life skills.

If to promote employment of women in typically male-dominated trades, the importance of successful female role models should not be underestimated. Experiences of the EF project showed that the placement of women in wage and especially self-employment was more successful if young women were informed about female graduates who are pioneers in a certain male-dominated trade. Using previously trained females as trainers has shown to be highly effective to motivate other women to select a certain trade.

Why employers may prefer women employees

The prevailing reasons for employers to fill a vacancy with a woman instead of a man are that women are:

- usually paid lower salaries¹;
- less likely to organize themselves in labour unions or exert pressure for improved labour conditions through strikes or other actions;
- more disciplined and show regular workplace attendance;
- more accurate and/ or faster in implementing the given tasks;
- less likely to be involved in disagreements or fights among workers.

In certain trades with home-based per piece contracting, such as garment fabrication, exclusively women are involved as they can combine this employment model with their daily household chores. However, the employers involved in the EF project stated that the main reason for the increasing spread of this model is that the shift from employing men in a factory setting to women on a home-based per piece contracting immediately eliminated disputes over salaries, labour conditions and the previously high risk of strikes.

Nevertheless, women have more difficulties to secure their job over a prolonged period of time. Among the EF graduates of 2009, who were initially gainfully employed, 23% of the women (but only 9% of the men) are unemployed three years after the training. Interestingly enough, the risk to become unemployed over time is less accentuated among self-employed women than those who are wage-employed (HELVETAS Swiss Inter-cooperation, 2012).

Conclusion

To summarise, the learning of EF shows that setting targets and indicators for women participation in a skills and employability programme is certainly helpful to stimulate the project and its partners to be agents of change. However, socio-cultural norms and beliefs as well as the realities of the labour markets create considerable challenges to break up widespread gender-biased perceptions and empower women for their gainful employment.

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¹The income of women, trained under the EF programme, is during the first six months of employment across all occupations on average 20-30% lower than of men.

Experiences in Monitoring and Evaluation of Vocational Education in Nepal

Bhoj Raj Neupane¹

Abstract

CTEVT is implementing a project called Skills for Employment Project (SEP) and many Market Oriented Short Term (MOST) training throughout the country. The writer had an opportunity to work in the project as a monitoring and evaluation consultant for nine months upto March 2012. This article describes the activities and practices witnessed in the different TTPs which were in the central and eastern region of Nepal, and puts forth some recommendations to further improve them. It tries to describe the expectation of the recently used ADDIE model in training, the extent to which it is practiced and the gap which if filled will bring the status of vocational education higher in Nepal.

With monitoring intervention by SEP, the TTPs had realized that vocational training to be a success needed lot of work from the coordinators and trainers with the provision of 80% practice opportunities on the part of trainees with the tools, materials and equipment used in the real world of work and it was not just the passing of information in the form of lecture notes. The TTPs saw that a good training could have good skill attainment leading to the gainful employment of the learner. For a training process to be successful the interrelationship of each component had to be well taken care of. If one component was ignored, it had negative effect on the other. In the case of the training monitored where the pre-training activities were not well planned and carried out, training delivery was negatively influenced, where the training delivery was not given due attention, the trainees were found weak in the skills of the occupation in which they were trained. This implied that the training process should be taken as a system, and if anything went wrong somewhere in the system, the whole system would be affected.

Definition of Monitoring and Evaluation

Monitoring is defined as “a continuing function that uses systematic collection of data on specific indicators to provide management and the stake holders of an ongoing development intervention with indicators of the extent of the progress and achievement of objectives and progress in the use of allocated resources.”
www.for.gov.ca/hre/sigy/Monitoring/Mon-mcwilliams.pdf

Similarly evaluation is defined as “the process of determining the worth or significance of development activity, policy, or program to determine the relevance of objectives, the efficacy of design and implementation, the efficiency of resource use and the sustainability of results. An evaluation should enable the incorporation of lesson learnt into decision- making process of both partner and donor.”
www.Web.worldbank.org

M&E in reference to CTEVT

If we take recent the reference of CTEVT (Council for Technical Education and Vocational Training), M&E (monitoring and evaluation) of vocational training is ongoing through SEP (Skills for Employment Project) implementation unit which is nearing to an end. This paper attempts to give an overview of the current practice in M&E and some suggestions to improve it based on the field experience and insight of the writer as an External Monitoring and Evaluation Consultant from ADB to SEP beginning from June 20, 2011 to March 30, 2012.

In course of the M&E activities close observation of trainer and trainee behavior in the classrooms, laboratory, workshops, field and formal as well as informal environment was the major tool of the assignment.

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Participatory and co-operative approach to elicit the information and then help the trainer and trainees in the form of suggestions, discussions, orientation sessions was used in carrying out the consultancy. Each and every finding from the field work were recorded and given to the project in writing with interaction with the project authorities for information as well as action. The work area of the consultant included central region and eastern region TTPs of the country. Centre based TTPs, District based (community based) and public TTPs were the three types of TTPs visited. A field officer accompanied with the consultant most of the times and Senior Monitoring Officer sometimes.

A total of 192 visits to TTPs were made during the consultancy which counted upto twice to almost all TTPs and thrice to four times to some with an average visit of 21 training programs per month. The maximum number of training programs visited in one month included 34 during the period. All TTPs except Khotang were visited as per the inception plan. More than 2500 trainees and 250 trainers were met and interactions made with them about improving the training methods and making the trainees employable. No serious problems were encountered during the period. As per the inception plan, the consultant conducted the orientation to trainers on the development and use of log book, three monthly plan, weekly plan, daily lesson plan and performance guide in Chitwan and Sindhuli districts which was well appreciated by the participants. It was found that most of the suggestions given by the consultants during the monitoring period were well accepted and followed and the improvements could be seen in the quality of training in most cases. It was noteworthy that the trainers of Dental program Kantipur made the performance guide themselves in Nepali language based on the 30 minute coaching with demonstration. The trainees, trainers and co-ordinators appreciated the six vows introduced as the input for positive thinking and reported the impact it had made in their lives.

Compatibility of the SEP M&E with ADDIE model of training

Practice of ADDIE in CTEVT and the gap follows the ideal situation demanded by each phase of ADDIE model in the narratives below as experienced by the writer.

1. Analyze the training: The phase finds out the specific content of the training to be delivered, the way the training should be organized and implemented, and , in terms of effectiveness, the training should be evaluated.

In this stage SEP conducted RMA (Rapid Market Analysis) which mainly focuses on the MOST (Market Oriented Short Term) skills. The curricula prepared by CTEVT and DCSI (Department of Cottage and small Industries) were used for content, organization and implementation of the training.

Beautician course used by the TTPs covered many tasks but they were too many to be finished in three months.

2. Design the training: In this phase the training success criteria must be designed, instructional strategies determined, learning objectives developed, learning objectives sequenced, existing materials reviewed, test items developed, prerequisite requirements identified, evaluation plan designed, management plan designed and the analysis documented.

Most of these tasks were carried out by SEP training in different ways. The contents were planned to teach using the three monthly plan format mostly using deductive exposition mainly lecture and drill and practice. Similarly only at reaction and learning level of the trainees, the success of the training was measured.

Most of the TTPs lacked test plans in the three monthly plans. No time was available for common modules within three months which was the set time for most of the training courses.

3. Develop the training: In this phase training technology is selected, existing materials are reviewed, instructional media and materials are developed, instructional management plan and delivery system is specified, training schedule is designed, standards for delivery are developed, lesson plans are developed, training environment is organized, and instruction is documented in the ideal training system.

SEP training utilized the manuals, texts, curriculum guides and syllabi prepared by CTEVT, CSIDB and F-Skill . Similarly, Performance guides, Books and Manuals were used. Standards covering eight areas with criteria (65 in total) for each consisted of:

- Training management (11)
- Trainees recruitment process and awareness program (6)
- Training physical facilities and environment (3)
- Other physical facilities and environment (10)
- Trainer(Number/Qualification/Training) (6)
- Post Training Support Plans (8)
- Training Delivery Methods and Quality (15)
- Use of Training Materials/Teaching Aids (6)

Concerning TTPs under SEP, three monthly plan and weekly schedule was also developed in most cases. The instruction was documented in the form of log books as per the standard set. The attendance records were well kept. All these were well specified in manual called training guidelines.

Some TTPs did not follow the curriculum while developing the curricula. Most TTPs did not include the common modules in their plans.

4. Implement: In this phase the designer must ensure that the training system continually receives the necessary support and maintenance. Planning, organizing, coordinating, evaluating and reporting activities which work towards ensuring the successful implementation of instruction are carried out. This is the combination of management, support and administration system of the organization to conduct training.

Regarding the practice in the TTPs the trainers were found to be knowledgeable about the content, trainees from electricity in field practice accompanied with the contractor of a local hospital, trainees from the plumbing program busy in field practice related to the trade, trainees accompanied with the trainer in the sites for field practice, trainers conducting individual practice on First Aid, some trainers' qualification as trainer more than expected, some performance guides prepared and used and documents for the training completed and well maintained . Quality indicators included also the placement unit in place with correspondence and other records, lesson plans and performance guides prepared after the orientation in most cases, provision of functional tools and equipment available as needed, trainer log book well maintained, training schedule being displayed, training venue found clean and hazard free, trainee evaluation being used, availability of office and facilities in some venues, tools and equipment available as per need, simple language used in instruction, training plan prepared and displayed, pertinent tools and materials used in training and use of posters, pamphlets in the classroom. Not only these but also the good maintenance of the trainees, use of real tools and materials, students' motivation and practice of communication skills while waiting the products to be ready, use of flip charts, timely constructive feedback given to the trainees, visuals and models displayed in some TTPs, women group well mobilized to conduct awareness program, continental cook training conducted in a good hotel in Gaighat, security guard training conducted by well experienced ex-army persons, trainer teaching using

the demo method and service of experienced trainers and lot of practical work in the training contributed to the quality training delivery.

Areas needing improvement included need of planning and preparation by instructors for content and skill delivery in the form of information sheets/ handouts and lesson plans, Performance Guide, three months plan and communication of the training course objectives to the trainees. Trainers teaching without the use of curriculum, and more use of note taking in the classrooms needed correction. Attendance of the participants given less importance in some sessions and less importance given in providing physical facilities/ toilet contributed negatively to the training environment. Mismatch between curriculum and teaching specially in vehicle driving course was to be taken seriously. Unavailability of citizenship certificate and educational qualification testimonials not furnished in some applications and that of the test records and job description of placement unit chief needed immediate attention. Less use of problem solving methods/ project methods indicated the dominant use of the lecture and note giving approach of teaching. Appointment letters specifying the remuneration of the instructor serving as the prerequisite of any assignment was ignored in many cases. There was lack of planning and execution of guidance and counseling sessions for the trainees. Less exposure of the participants to real world of work was the most heard complaint of the trainees. Less on the job or internship opportunities were found captured. All curricula were in English language which was a barrier to learning to a trainee whose entry criteria was literate to below SLC. DCSI curricula did not specify performance standards.

5. Evaluate: In this phase one to-one evaluation, group evaluation and field trial of the learning of the trainee is carried out.

Regarding the performance of the TTPs under SEP, internal tests were administered to the trainees in the form written and practical exercises. National Skill Testing Board conducted the external summative evaluation after the end of the training and provided skill certificates to the successful candidates in the training venue for each TTP. The products and services prepared and given were of acceptable to excellent quality which was further evidenced with the higher percentage pass in the skill tests.

Although internal test were given from time to time no records of the achievements were kept. Trainers were not well oriented about keeping the test records.

Interaction with the employers met revealed that the graduates were diligent and committed to their work. The food prepared by them was well appreciated by the guests, the bearers were performing to the standard expected and the design fabricated by the trained employees were up to the par. Similarly no complaints were heard from the construction workers except that their computing skills needed sharpening.

Recommendations

The following recommendations were made based on the findings in the field work, interactions with the related training personnel and on the knowledge and experience of the consultant.

Pre-training activity

- i. A short literacy test should be administered to just literate trainees (class five or below level pass) at the time of recruitment.
- ii. Venue for off season vegetable and herbal farm worker program should be approved only after ensuring trainer capability for teaching, the practical plot of land for the work and reliable source of water and fertility of the land.
- iii. Skills training should be conducted only after providing didactic course (TOT) of two weeks consisting conditions of gaining attention, Informing learners of the objectives, Stimulating recall of prior learning, presenting the stimulus, providing learning guidance, eliciting performance,

providing feedback, assessing performance, enhancing retention and transfer as per Gagne, Briggs & Wager, 1992

During training

- iv. Thorough regular counseling sessions on wage-employment and self employment techniques and opportunities should be conducted by the TTPs to the trainees in all venues.
- v. Minimal note dictating approach with much use of performance guides and information sheets should be applied in the training.
- vi. Nepali script and words in the visual shown and writing on the board should be used
- vii. 11-16 hours should be used as the most convenient time for a training the day shift training with women as the majority of the participants.
- viii. Energizer in the form of singing and dancing and joke telling and conversation making should be used making them more relevant to the skills needed in the training.
- ix. Remedial teaching should be used for the illiterate participants.

Curriculum

- x. Prerequisites for any training should be the curriculum, course outline or curriculum guide in Nepali language.
- xi. Post harvest technology curriculum should be reviewed with additional skills of papad making, chowmein making and dalmat making skills and off season vegetable course with mushroom making and potato planting skills.
- xii. Beautician course should be reviewed to cover the most demanded skills within the time prescribed in the training .
- xiii. All programs should be reviewed for some contents to be taken out and common modules to be covered during the three months.

Monitoring the training

- xiv. Provide intensive orientation to trainers about the development and use of the planning tools like lesson plans, performance guide, weekly plans and the way trainee's performance should be
- xv. Monitoring of each training program be done by a team consisting of a consultant with training and development expertise, a subject matter expert, and a field officer.
- xvi. There should a field officer in each district to monitor each training program more closely and frequently.
- xvii. The responsibility of distribution of the stipend to the trainees should be delegated to the coordinator of the respective program who should be accountable for any dishonesty. The field officer should verify that the money is distributed to the proper person by checking the photograph and signature of the recipient which should be collected during very beginning of the training.

Sustainability of the training

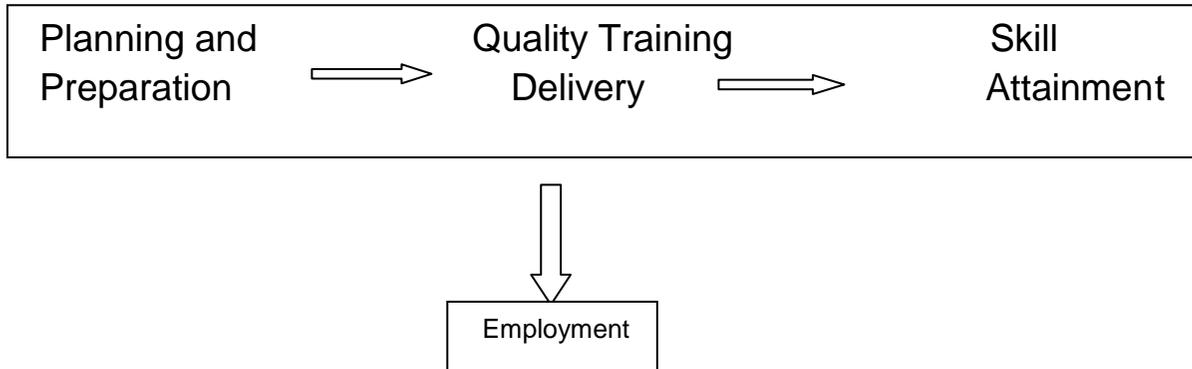
- xviii. The training providers should help the trainees to be organized in the co-operative and produce products and services with the assistance they can get from there in the form of loan which they can payback after selling the products or services generated in this way. Example of such products could be different dress items from tailoring, different designs of dress items from Hand Embroidery, bamboo products from bamboo craft, different types of fruit and vegetable items processed from post harvest technology etc.

- xix. Focusing on the agriculture related trade, plot of land can be given on lease to the graduates for planting crops and herbal plants in a business scale which means handling production and marketing related functions.
- xx. The TTPs could manage a plot of land to buy in lease and get the graduates of the off season vegetable course work in the land, prepare products from the land and sell them in the market to pay back the loan and make profits.
- xxi. A fund should be established to help the graduates to purchase tools and equipment to start their own business.
- xxii. A committee from among the alumni from each training course should be formed in each VDC / municipality to meet and share ideas to search and share employment opportunities.
- xxiii. An advisory committee should be formed in each VDC to sustain and grow the employment opportunities. Chaired by the nearby TTP chief selected by CTEVT, the members of the committee should include one graduate each from the training course conducted in the VDC, the trainer of each training course conducted, employer representative from each course and the Chair of the VDC or municipality.
- xxiv. The Placement and Counseling Co-ordinate Unit (PCCU) in CTEVT at Sanothimi should provide counseling and placement services by activating the present Counseling Units through the advisory committees in the VDCs / municipalities through verbal and written communication. All the TTPs should have PCUs operational in their organogram.
- xxv. The community based organizations including the organizations dedicated to serve the women in the country should be suggested to include skill enhancement component in their programs through which the training graduates should be provided with loan to run a business or enterprise.
- xxvi. A database of the jobs available in the local and international market should be maintained, updated and disseminated in the TTP graduate friendly mode.
- xxvii. The TTP should continuously focus on the employment of the graduates even after the training is over and keep in touch of their graduates employment status.
- xxviii. Establishing a fund and its working procedure and tools of the trade should be given to the successful trainees who cannot afford it but who are potential entrepreneurs.

Conclusion

It will be no exaggeration to say that SEP has accomplished a lot with a total of 60092 people having benefitted from the MOST training and 72.46% , and 80.76% trainees from centre based training and community based training having been employed ,so far, respectively. A wave of training has come in the organizations of Nepal. More and more private TTPs have begun to conduct the training as per the market demand. The consultant saw a lot of improvements in the training quality as the suggestions given were implemented by the TTPs. Due to the monitoring intervention by SEP, the TTPs had realized that vocational training to be a success needed lot of work from the coordinators and trainers with the provision of 80% practice opportunities on the part of trainees with the tools, materials and equipment used in the real world of work and it was not just the passing of information in the form of lecture notes. The TTPs saw that a good training could have good skill attainment leading to the gainful employment of the learner. For a training process to be successful the interrelationship of each component should be well taken care of. If one component was ignored, it had negative effect on the other. In the case of the training monitored where the pre-training activities were not well planned and carried out, training delivery was negatively influenced, where the training delivery was not given due attention, the trainees were found weak in the skills of the occupation in which they were trained. This implied that the training process should be taken as a system, and if anything went wrong somewhere in the system, the whole system would be affected.

The diagram below represents components of a training process leading to the employment which is the expected outcome of the training. It is desirable that all the work related to training revolves around the components which fit in the nine aspects and 65 indicators mentioned above.



With this and the recommendations given in the preceding section, the world of training in Nepal is expected to flourish in the years to come with standard marketable products and services given by the well trained personnel in the country and abroad.

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Green Technical Vocational Education and Training (TVET) for Sustainability

Er. Diwat Kumar Shrestha¹

Abstract

Environmental Degradation is the dangerous phenomenon by which every element of the earth is affecting. Health hazards are the main thing invited by the Environmental Degradation. The main cause to come this situation is misuse of natural resources in using modern technology. TVET sector is the main actor to discourage this situation. TVET Institutions should be the Model to address the environmental issues in its own premises in terms of physical, mental and social aspects of it. This article emphasizes the vital role of TVET Institutions in developing the Green World. The Trainers, Trainees and all the Stakeholders in TVET sector should be aware about the environmental aspects. Whatever the resources used in the training activities, even it is hardware and software aspects should be environment friendly. Green TVET only can succeed the Vision of Green World and can make the World better place to live.

Introduction

The definition of Technical and Vocational Education and Training (TVET) used in the UNESCO and ILO Recommendations on TVET for the Twenty-first Century, adopted by UNESCO's General Conference in 2001, is quite inclusive and broad: 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 practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life." It refers TVET as technologies related sciences means it cannot be detached from the sustainability aspects.

The major challenge in the world today is to find ways of living and working sustainably, so that the reasonable needs and wants of people from all walks of life and in all countries can be satisfied without so over-exploiting the natural resources upon which all life depends that the ability of future generations to meet their needs and wants is threatened.

Sustainable development (SD) had its birth when the term 'sustainability' was first used in the United States in its National Energy Policy Act 1969. However it was only the late 1980s that the concept of sustainable development gained momentum, following the publication of the Bruntland Report by the World Commission on Environment and Development (WCED) in 1987. This international effort shows that the world has begun to realize the importance of conservation of natural resources and environmental quality, given the specific evidence on the critical depletion of the environment that has started to threaten the well-being of mankind both present and future.

The Bruntland Report states that development is sustainable when it 'meets the needs of the present without compromising the ability of future generations to meet their own needs.' Since then, this quote has become a principal reference for sustainable development initiatives, world-wide. The report also suggests seven strategies for its implementation that include (1) Reviving growth; (2) Changing the quality of growth; (3) Meeting the essential need for job, food, energy, water and sanitation; (4) Ensuring a sustainable level of population; (5) Conserving and enhancing the resource base; (6) Re-orienting technology and managing risk; and (7) Merging the Environment and economy in the decision-making process (Langston, 1997).

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Despite on-going debate, the universally accepted set of principles of sustainable development is named the *Triple Bottom Line* that includes three broad components: social, environmental and economic aspects of sustainability. This international set of sustainability metrics is often used to gauge the success of a particular development project (Roger, Jalal, & Boyd, 2006). It is treated as a basic start-point for sustainability initiatives where scholars and researchers of various disciplines engage in, and formulate, the sustainability principles concept for their respective area of development interests. Sustainable development is not a fixed concept, “rather it is a culturally-directed search for a dynamic balance in the relationships between social, economic and natural systems – a balance that seeks to promote equity between the present and the future, the equity among countries, races, social classes and genders” (Fien & Wilson, 2005).

The Green approach in TVET

Every occupational activity (manufacturing, maintenance, service) uses resources in natural form (water, minerals, etc) and in processed form (materials, objects, electricity, etc). Thus every occupation directly related to sustainable development in terms of the environmental component. Defining goals for Education for Sustainable Development (ESD) integration in TVET learning is an important step in addressing SD through training. There should be a clear link between occupation-specific skills and SD concepts and practices. In terms of economic component, “the use of environmentally-friendly materials, low energy consumption, environmentally clean and sustainable processes, intelligent transport and logistics procedures and a waste management concept geared to waste avoidance can lead to a reduction in cost and, in the longer term, to an increase in corporate competitiveness” (Haertel, 2006).

A number of characteristics that reflects a mature university approach towards sustainability, as defined in that report (Bekessy, Burgman, Wright, & Filho, 2003) are as follows:

- Articulation of social responsibility in the institutional mission and structures;
- Integration of social, economic and environmental sustainability across the curriculum;
- academic research on sustainability, and consideration of social, economic and environmental sustainability issues in all other research;
- outreach and services, including the development of partnerships with schools, government, non-governmental organizations and industry;
- sustainable institutional operations, including effective monitoring and reporting;
- Staff development and rewards;
- Student opportunities;
- Cultural inclusively.

These criteria present a list of requirements that can be adapted/ modified by TVET system.

Agenda 21, the document adopted at the UN Conference on Environment and Development (UNCED, 1993), likewise emphasized the need to promote education, public awareness and training in order to assist bringing about sustainable development. In particular, Chapter 36 on promoting education, public awareness and training states that, “Education and Training are vital for promoting sustainable development and improving the capacity of the people to address environment and development issues.”

In particular, the joint ILO and UNESCO Recommendations on Technical and Vocational Education for the Twenty-First Century states that, as “a vital aspect of the educational process in all countries” TVET should:

- (a) Contribute to the achievement of the societal goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of all individuals, both men and women, for active participation in the establishment and implementation of these goals, regardless of religion, race and age;

- (b) Lead to an understanding of the scientific and technological aspects of contemporary civilization in such a way that people comprehend their environment and are capable of acting upon it while taking a critical view of the social, political and environmental implications of scientific and technological change;
- (c) Empower people to contribute to environmentally sound sustainable development through their occupations and other areas of their lives.

In this context, Greening TVET ought to open a window to the world and vice versa, e.g. TVET institutions should explore and exchange information about innovative teaching and learning methods, such as programs on renewable energy, clean water and clean technology, reorientation of TVET curricula, sustainable campus management programs and examples of innovative approaches to integrating learning in TVET with on-the-job training and community services aimed at positive societal responses to bring the relevance and emphasis for a sustainable future. In sum, moving towards a greening TVET will not automatically address all poverty issues in relation to eradicating poverty and hunger which is the top priority of the UN Millennium Development goals, and should also be ensure that policies and investments geared towards a greening TVET are compatible with reducing environmental risks and scarcities.

Green TVET in Nepal

Jiri Technical School, a Technical and Vocational Education and Training center in Dolakha District of Nepal has developed environment friendly system in its premises. Each and every residence of the school has own septic tank and soak pit. The overflow of the soak pits flows towards the fish ponds located in agricultural field. The water from soak pits is already clean and it will be cleaner by the sedimentation in fish pond. The fish pond is the combination of water from river and soak pits. The overflow from the fish pond, which is pure water, goes to the Jiri River. The school has different types of rubbish pits and incinerators to manage wastes. Degradable wastes will be made compost fertilizers, non-degradable wastes are buried deeply in some pits and some non-degradable are burned in incinerator. The Trainers, Trainees and all the members of school are aware of environment. The skills and knowledge related to environment and sustainable development are incorporated in their curricula. The other example of environment friendly training and production center is Handicraft Production Association of Ravi Bhawan of Kathmandu, Nepal. This Institution is very much aware of environment in their premises. They are using Reduce and Reuse techniques for sustainability. There are some other organizations also following sustainable development aspects in Nepal. Most of the donor funded organizations has this types of concepts, the organizations developed by Nepal Government also should follow the environmental aspects.

Sustainability and TVET

Education and training for sustainable development means that we try to see the globe as a whole and understand our joint responsibility for its wellbeing, including the human life and physical environment. ESD aims to raise citizens to adopt certain knowledge, skills, attitudes, and values in domain areas of TVET. Other highlighted objectives include growing into a cosmopolitan, or a citizen of the world, as well as facing the environmental problems of the world and solving them to some extent (Lasonen, 2010).

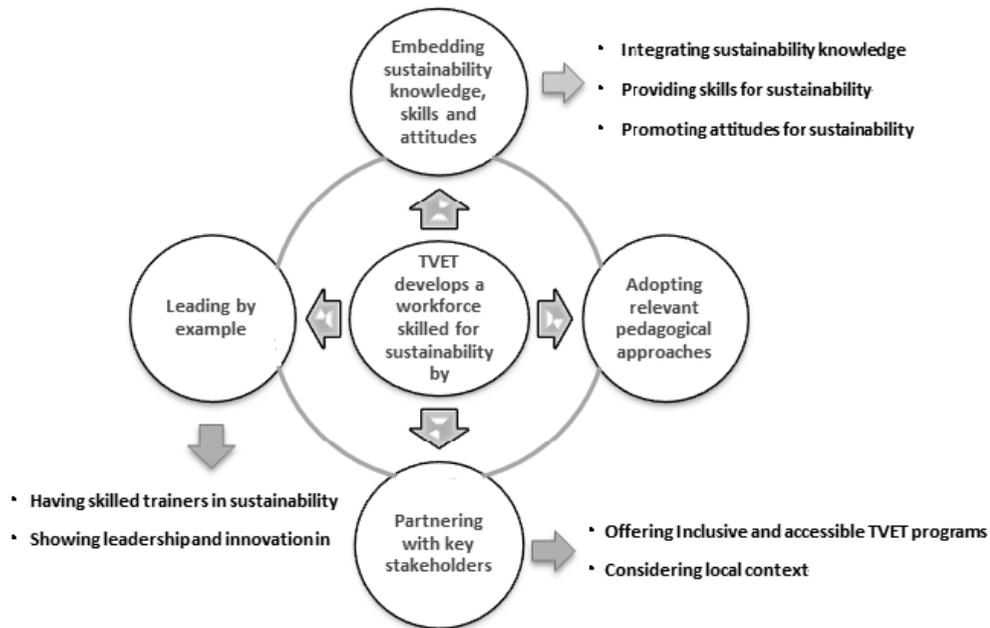


Figure: Key aspects of a successful TVET for sustainability (Chen, 2011)

As nations continue to expend resources and pollute and alter entire eco-systems, the transition to an environmentally sustainable economy is most urgent and will drive in coming years the changes in the mix of skills that countries require for development. For instance, the global rise of the green development agenda suggests that there is a need for TVET to engage more systemically with these concerns, both in terms of its own ways of working and in response to the changing job opportunities and skills needs (UNEVOC, 2011).

Furthermore, as noted in the Discussion Paper Series 1 (UNESCO, 2006) on Orienting Technical and Vocational Education and Training for Sustainable Development, TVET has multiple concerns about sustainability. The over-exploitation of natural resources, ill-health and grinding poverty can threaten the ability of future generations to satisfy their needs and wants. The challenge for TVET is to re-orient and re-direct its curricula to imbue students and trainees with respect for the conservation and sustainable use of resources, social equity and appropriate development, plus with competencies to practice sustainable tasks at the workplaces of today and tomorrow.

The growing significance of sustainability is having major impacts upon business, industry and society as a whole. Many new industries and employment opportunities are being developed, e.g. in ecotourism, environmental monitoring, sustainable community development, eco-design, recycling, alternative energy sources, land rehabilitation, pollution control, waste water treatment and reuse, etc. All require skilled workers who have knowledge of –and commitment to- sustainability, as well as the requisite technical knowledge. This is creating new roles and courses in Technical and Vocational Education and Training (UNEVOC, 2011).

Conclusion

TVET plays a crucial role in fostering sustainable development that is to provide skills for all including the marginalized and vulnerable groups such as the poor, the unemployed, and women, rural workers, disabled

and other minorities, so that education remains an accessible basic human right (UNESCO, 1999). This can be achieved focusing in developing programs especially designed to attract these various groups and also creating job opportunities to them through partnerships with the various business sectors. Integrating sustainability in the curriculum, taking a holistic and multi disciplinary approach, using a variety of pedagogical approaches, designing life-long learning programs, using innovative approaches to flexibly deliver TVET programs and developing courses that meet the local labor market demands; TVET organizations will help society to move towards sustainability. Sustainable equipment in training institutions, Environmental management system, Sustainable organizational development, Training of teachers and instructors towards sustainability, integrating environmental relevant competencies in vocational training courses are the aspects to incorporate in TVET Institutions for Green TVET.

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Technical Vocational Education and Training: Global experiences for Nepal

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Abstract

Long before formal or even compulsory education was introduced, children learned to farm and hunt from their parents. They learned essential skills as apprentices through being introduced in their community's practical work or by watching their parents' actions. From this manner, the demand for vocational skills has changed tremendously over the centuries in some parts of the world and has only incorporated minor adjustments in a few others. Vocational education and training has been continuously evolving, varying from country to country. The development is not even across the countries.

TVET can be regarded as a means of preparing for occupational fields and effective participation in the world of work. It includes technical education, vocational education, vocational training, on-the-job training, or apprenticeship training, delivered in a formal and non-formal way. It can run in many areas, both within and outside the education system in countries. Both in the developed and developing world, recognize the important role that TVET plays in equipping individuals with relevant skills and knowledge, hence enabling people to effectively participate in social, economic and technological innovation processes.

Investment in TVET generates both short- and long-term benefits for individual, employer and society. In addition, there are several challenges associated with the TVET sub-sectors. With regard to the financing, the first and foremost focus is who funds for what and to whom and in what way in the field of initial and continuing vocational education and training. Even though TVET has proven to directly contribute to the societal wellbeing and socio economic status in some other countries, Nepal can learn and experience from best practices to develop some strong models of where TVET systems and the labour market are working well to meet the needs of students and employers. For this, we need to start from today.

Background

The concept of vocational education and training dates back to ancient times. Long before formal or even compulsory education was introduced, children learned to farm, hunt and build from their parents. They learned essential skills as apprentices through being introduced in their community's practical work or by watching their parents' work. The demand for vocational skills has changed tremendously over the centuries in some parts of the world and has only incorporated minor adjustments in a few others. Because of this, vocational education and training has been continuously evolving, varying from country to country. Also, the way vocational training is connected or incorporated within the education system and the resources made available to do so differs significantly. This article focuses on the different dimensions of vocational education and training by taking references from global perspectives. It also explores some implications that can be useful for Nepalese Technical Vocational Education and Training (TVET) system - expansion, development and sustainability.

While reviewing the status and historic development of technical vocational education and training in the global as well as national context, it is necessary to start by defining it. First, a clear understanding is required on the concepts of education and training, and of vocational education and training. Education relates to the development of the mind, whereas vocational education and training focuses on the mastery of practical actions and skills (Hoeckel, 2008). Quality education uses practical or occupational contents and is often

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linked to applied actions that turn theoretical knowledge into a practical skill. Good training may function as a stream for the best possible education for students that have a more practical focus and learning style. Quality training starts with setting out clear goals in preparation for an existing occupation. It focuses on specific purposes and should be building on the solid foundation that is laid by quality basic education. In addition, quality basic education should shorten the length of training required. In this way, both training and education have their specific position but both should be designed to support the conceptual and analytical development of the trainee/learner (Grubb, 2006).

There are conceptual differences between the roles of vocational training and education. As pointed out in the last paragraph, the line between training and education can be blurred or even nonexistent (Hoeckel, 2008). A vocational education is one which imparts knowledge and skills for immediate use. Commonly, the trainees acquire the skills in a specific area. Examples of vocational training are painting, decorating, measuring, cutting and welding metals, tailoring, etc. Technical and vocational are different, although in most cases they are interchangeably used (ibid). Technical is the overarching area within which vocational training areas are defined, however not all technical areas are vocational.

The 2001 UNESCO and ILO 's General Conference on Technical and Vocational Education and Training referred to TVET as "those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge related to occupations in various sectors of economic and social life" (UNESCO & ILO, 2002). In these definitions, TVET can be regarded as a means of preparing for occupational fields and effective participation in the world of work. It also implies lifelong learning and preparation for responsible citizenship. In its broadest definition, TVET includes technical education, vocational education, vocational training, on-the-job training, or apprenticeship training, delivered in a formal and non-formal way. Technical education mainly refers to theoretical vocational preparation of students for jobs involving applied science and modern technology. It emphasizes the understanding of basic principles of science and mathematics and their practical applications, rather than the actual attainment of proficiency in manual skills as is the case with vocational education.

Hence, the goal of technical education is to prepare graduates for occupations that are classified above the skilled crafts but below the scientific or engineering professions. Vocational education and training prepares learners for jobs that are based in manual or practical activities, traditionally non-theoretical and totally related to a specific trade, occupation or vocation, hence the term, in which the learner participates.

Table 1: Modes of TVET delivery

	Technical	Vocational
Formal	Academic Technical Education	School-based vocational education, Vocational training
Non-Formal	Work-Based Training Non-school TE Providers	On-the-job Training Non-school VT providers

Adapted from Joo, [n.d.], TVET Issues and Debates, World Bank Institute

Vocational education is usually considered part of the formal education system, and usually falls under the responsibility of the Ministry of Education. On the other hand, vocational training is often better linked to the labour market and employment development system, and usually falls under the responsibility of the Ministry of Labour and Social Affairs. TVET is often offered at secondary and post-secondary levels.

TVET focuses more on providing occupational skills, whereas academic courses are better known at focusing on theory and professional career paths. Tilak (2002) mentions that TVET produce specific human capital whereas general education produces general human capital. TVET covers the basic life skills (literacy and numeracy training), basic vocational skills for particular occupations, semi-professional vocational

training, and the degrees with a practical focus. One difference to other education programs is the on-the-job training component. Many students will have the opportunity to work in their field while being educated. Some will be accepted into apprenticeship programs that can provide an enabling environment in further development of their skills.

In this way, TVET contributes to specific human development objectives as well as objectives relating to the improvement of competitiveness, production and household income (Grubb, 2006). It also develops the skills of people in order to enable them to access the labour market. The practical skills that are provided through TVET allow people to engage in careers which involve manual or practical abilities. It has a specific and practical focus, rather than an academic one, and it is designed to provide people with the skills needed to start a career in an area of interest. Hence, TVET can act as the hub between the general education and labour market (EI, 2009).

Technical vocational education and training plays an essential role in the development of skills, competences and knowledge that individuals bring to the workplace. Increased capacities translate into increased employability and productivity of individuals. It also has direct effect on the competitiveness of enterprises and national economies. Thus, technical vocational education and training exert a powerful influence on the well being of societies.

TVET in National Development

All nations in the world are faced with the challenge of improving the capacity of their workforce to respond to their own national development needs and to the demands of a rapidly changing, more globally competitive world. The future success of nations, but also of individuals, enterprises and communities increasingly depends on existence and possession of transferable and renewable skills and knowledge. Many, both in the developed and developing world, recognize the important role that TVET plays in equipping individuals with relevant skills and knowledge, hence enabling people to effectively participate in social, economic and technological innovation processes.

TVET was regarded as a core component of the national development strategy in the international community prior to the 1980s, but gradually lost funding and support as the 21st century and modernization approached. However, the 21st century's need for new skills to match advances in information, communication and technology has initiated the return of TVET to the international agenda (Joo, [n.d.], World Bank Institute). TVET varies substantially across countries in terms of the system they used, definition they have provided and forms of provision they have employed (Hoeckel, 2008). Due to the lack of standardized approach of data collection on TVET across different countries, it has been proven difficult to compare TVET systems on a regional or global level (ibid).

The programmes for universal primary education launched following the Jomtien and Dakar conferences are now leading to rapid increases in the number of young people completing primary school in developing countries. There is already enormous pressure on secondary and vocational systems, which are still very small in many countries. International experience shows that accommodating an increasingly diversified student population calls for the provision of a variety of learning pathways, including in technical and vocational subjects.

TVET in diverse places

Technical vocational education and training takes place in many areas, both within and outside the education system in countries. Mostly it is provided in schools and (technical) colleges. It is also known to take place on the work floor and in community centres. In the United States, it relies heavily on training and retraining in colleges catering for adults but TVET makes more use of apprenticeships in northern Europe and Scandinavia. Kingombe (2012) also mentioned about company based, apprenticeship and school-based TVET system. TVET in schools refers to vocational and education training courses undertaken as part of

school studies. Chappel (2003) points out that the Australian TVET system is offered in educational institutions including schools, colleges, adult and community learning centres, education training providers (public, private and non-government agencies), industry and small business and private training consultants. This is also highlighted by a report of EI (EI, 2009).

Thus, vocational education and training occurs in a large variety of structures and under various responsibilities, both in the public and in the private sector. TVET programs can be run in formal schooling system or outside the general education system in various kinds of informal learning settings (EI, 2009).

Benefits of TVET

Investment in TVET generates both short- and long-term benefits for individual, employer and society (Hoeckel, 2008). Although it is difficult to quantify the benefits, there are ways to express the benefits in different ways at different points in time. Hoeckel (2008) highlights the benefits of TVET in the following manner.

Table 2: Benefits of TVET

	Individual	Employer	Society
Short-term benefits	<ul style="list-style-type: none"> • Employment chances • Earning levels • Work satisfaction • Drop out less likely from vocational than general courses 	<ul style="list-style-type: none"> • Higher productivity from well trained workforce • Saved costs from recruiting external skilled workers (incl. time for integration and risk of hiring a person not known to the company) 	<ul style="list-style-type: none"> • Saved expenses for social benefits (unemployment as consequence of failed transition from education to work)
Long-terms benefits	<ul style="list-style-type: none"> • Flexibility and mobility • Lifelong learning (more likely to receive training and upgrade skills later in life) 	<ul style="list-style-type: none"> • Supply benefits (e.g. image improvement) • Less turnover (no need for retraining of new workers) 	<ul style="list-style-type: none"> • Externalities from productivity gain due to better education • Increase in tax income from higher earnings

On a macro level, TVET is extremely well-positioned to contribute to global development, participation and interaction. It is especially flexible in nature (which, for example, allows broad participation of people requiring skills training) and is greatly oriented to the labour market (which allows appropriate adaptation to changing trends in the local, national and global labour market and economic sectors). In the following text, some important global societal trends are highlighted in which TVET is particularly suited to facilitate adaptation and which are important for national progression (NICHE strategy on Technical and Vocational Education and Training, July 2010):

Socio-economic development and Millennium Development Goal (MDG) achievement: Skills development provides individuals with a better chance to obtain productive and profitable employment thereby sustainably increasing their earning power and access to a quality life through being able to afford quality health care, food, clothing and shelter (MDG 14; UN, 2010). When TVET curricula are focussed on creating “job-creators” (self-employed workers) rather than “job-seekers”, unemployment in developing countries can be reduced, thereby allowing developing countries to get closer to meeting the MDGs.

Global Competitiveness: Currently, technological changes are taking place at an extremely fast pace in a fast globalising world. The gap in knowledge and ownership of advanced technologies between developing and developed countries has always been large, with developing countries often adopting technologies and solutions to innovate elsewhere and lacking the capacity and resources to adapt most of the technologies to the local context. Transfer of technical knowledge through TVET, coupled with creative skills and career

guidance, can raise the innovative capacity of developing countries, allowing them to innovate quality technological solutions for their own context and for export and to keep up with the developed world.

Career mobility in an increasingly dynamic employment market: Employability refers to an individual's capability to move self-sufficiently within the labour market through the knowledge, skills and attitudes which they possess, the way they use these assets and present them to employers, and application of these qualities in the variable contexts within which they seek work (Hillage & Pollard, 1998). Employability somewhat erodes the traditional employment model which was characterized by continuous careers, in the form of an employment of unspecified duration with the same company throughout one's working life. The observed global trend is increasing career mobility and, as such, TVET is no longer merely expected to provide learning opportunities for skills development, but also to enable employees to proof themselves to be flexible under new working conditions due to a broad individual competence profile.

Flexibility and robustness in qualifications recognition: There is a growing recognition that the methods of developing a competence are varied and that knowledge and know-how can also be acquired through means other than simply following a training course, and in different settings other than the formal classroom. The concept of "qualification pathways" has become a central point for many TVET systems. These developments greatly increase the reach of education to participants who fall outside the formal education system, but now have access to other learning environments and experiences.

As we can derive from the above, a quality TVET programme plays an essential role in promoting a country's economic growth and contributing to poverty reduction as well as ensuring the social and economical inclusion of marginalized communities (EI, 2009).

Challenges in TVET

There are several challenges associated with the TVET sub-sectors. The marginal position of TVET systems in the globe are the inadequate capacity of intake and fewer relevancies of the training system, the inadequate value and social recognition given to the qualifications and the low level of resources allocated to vocational training. Through lack of adequate funding, the sector is naturally finding it difficult to develop as required (NICHE strategy on Technical and Vocational Education and Training, July 2010):

Quality and image of TVET: In most developing countries, TVET is limited in scale, scope, quality and relevance. The programmes are not relevant to the needs of the local labour market, the curricula and syllabi are outdated and the institutions lack the tools and equipment necessary for a practical education. Due to the fact that the institutions are poorly resourced, the education and training remains theoretical and the graduates are not considered more skilled than their academic counterparts by the labour market. TVET students do therefore not enjoy the same social standing as students in academic education in many countries. It is perceived as a low level education. In January 2012, OBESSU (The Organising Bureau of European School Student Unions) conducted a survey among its members to gather information about the conditions of students in TVET throughout Europe. The report showed that only 27% of young people would recommend a TVET education to their peers. TVET as such is not a second rate education, and it should not be perceived as such. In this way, TVET has a status problem in the society. It continues to be of low status and it is considered only for students without alternative opportunities (Grubb, 2006).

Resource allocation and advocacy for TVET: TVET is often not given priority within the education system in terms of resource allocation and advocacy, as compared to the general education. TVET systems are often burdened by a range of performance issues. Improving the efficiency and external performance of vocational training is a challenge for the sector's future development. Many of these are related with generating and allocating the necessary financial resources, and in spending them effectively. Because of these, people are not informed sufficiently about the positive effects of establishing a quality TVET system, both on an

individual and societal level. The lack of awareness causes potential candidates not being able to make an informed decision, therefore traditionally being influenced by general perceptions (as described above).

Coordination between TVET and labour market: TVET is specific and directly related to practical implementation; it therefore demands a strong coordination with the demands of the labour markets to ensure appropriate courses. In order to succeed in global competition, a labour force with the right skills is required. The big challenge is to produce TVET graduates more responsive to fulfil labour market requirements. At current times the private sector is disconnected with the public one and there is hesitation amongst employers to cooperate with government institutions that provide TVET. A closer cooperation between institutions and private employers would also soften the boundaries between learning and work itself.

Gender balance: Females comprise half of the youth and labour active population in developing countries (US Census Bureau, 2010). Yet TVET in these countries is mainly attended by male students. Considering that females in these countries often end up self-employed in the informal market, TVET can play an important role in imparting trade and entrepreneurial skills to females which would give their economic activities sustainability and profitability through professionalization. Career guidance at entry points into secondary and tertiary education levels could remove stereotypes about TVET and provide students with objective knowledge on the advantages of TVET. Catering the needs of disadvantaged groups is extremely important. There is a universe of difference between the quality of life of an unemployed person with special needs, often facing poverty and social isolation and that of the same person working, contributing and engaging. It demands diversified programs on TVET.

Implementation and resources: TVET is facing in its implementation that it requires comparatively more intensive resourcing (Hoeckel, 2008 & Grubb, 2006). For quality TVET to be provided, often work space, tools, materials and skilled master trainers are needed. The inadequate resources made available by the system and the limit funding for equipments and quality teachers causes TVET provision often to lack the quality that it requires. Students of TVET do not have access to equipment and teachers have not been provided with the necessary training. In the same manner, students have problems finding apprenticeships. As we see, this is related with the coordination, harmonisation and ensuring consistency in actions, as well as a lack of rationality and effectiveness in resource management. The training courses produced can be expensive and not relevant to the labour market, with a low level of diversification of branches of training. The deficit in qualified trainers and the absence or inadequacy of institutions providing training for trainers is other concerns. As can be seen in most of the issues presented, resource allocation often seems at the base of them, the following section will therefore further look into the financing of TVET.

Financing of TVET

While discussing about financing TVET, the first and foremost focus is who funds for what and to whom and in what way in the field of initial and continuing vocational education and training. A second focus is that of the economic return in the form of higher productivity and profitability for enterprises and higher wages and employability for individuals when provided with a labour force that has gone through a quality TVET system. This cause and affect raises the question about the appropriateness of direct public finance.

In addition, it is vital to take into account the costs of investment in physical items, and amortisation so that investment can be renewed once the equipment is obsolete or no longer functioning, as well as the costs of investment in immaterial assets, including in particular innovation processes, training design and capacity-building for those involved.

As far as its financing is concerned, additional factors related to the socio-economic, political and administrative situations prevailing in respective countries, have to be taken into account. Co-financing arrangements between State, Employer and Individual is generally taken across the globe (Hoeckel, 2008).

Tilak (2002) highlights some of the characteristics of TVET system of some selected countries in the following manner:

- Korea - leading example of how governments can promote an extensive school based TVET.
- Singapore - comprehensive vocational training infrastructure where linkages were sought between education institutions and training institutions.
- Indonesia, Malaysia, Philippines, Thailand, Sri Lanka- fairly developed vocational and technical education system both in public and private schools.
- Bangladesh, Nepal, Pakistan and Myanmar - patchy system of vocational and technical education
- Japan - most developed and well established infrastructure providing school based as well as enterprise based TVET.
- India and China - lopsided education development structures including for TVET.

The financing of TVET can broadly be categorized into initial and continuing funding and institutional organizational funding. The initial and continuing vocational training contains a monetary and an institutional-organizational component (Hoeckel, 2008). The monetary aspect attempts to quantify the amounts allocated for funding in a differentiated manner according to the different funders, i.e. the state, the company, individuals, and according to public and private budgets. The institutional-organizational aspect primarily focuses on the procedures - mutually agreed through a balance of interests between those participating in vocational training (state, employers' associations and trade unions) via political opinion-building and decision-making of resource collection, resource use and resource administration with the aim of achieving the targeted vocational training goals established through consensus.

Various financing strategies are practised in different parts of the world. Some of the well known mechanisms for financing TVET have been categorised as public financing, enterprise financing, private and public sponsored financing and international donor assistance. The major sources of financing are state, employers, employees, students and schools. From these actors of financing, the system generally includes the public system, levy system, semi-market system and privatized system (Lamsal, 2011). However, all the countries are confronted with the issue of sustainable funding for TVET sub-sector whose costs are higher than those of traditional teaching. Funding of the sector is an issue in terms of sources of funding, management of the system, allocation of the resources obtained and control of overall and unit costs.

In many countries the vocational training sector is experiencing significant funding difficulties. Universal schooling in primary school is more likely to receive resources and allocations, which is completely understandable. Thus, the educational reforms that have been undertaken in many countries in recent years have prioritised the development of primary education, at the expense of the other elements in educational systems. However, it appears that this imbalance has not always been helpful in terms of strengthening human capital, employment and economic growth. A more balanced overall approach to the education sector is needed to move ahead with the rebalancing of national strategic frameworks to promote economic development. In spite of the difficulties, the overall costs on vocational education and training are on the increase. Expenditure on equipment, infrastructure, consumables e.g. raw materials and spare parts is also increasing. It is then imperative to search for alternative means of financing. The challenge before policy makers is to introduce new and different ways of financing as well as to ensure that the resources which are available for TVET are used more effectively.

TEVT in Nepal

Whereas TVET in the international context is rooted in a longstanding tradition of valued craftsmanship and as a result was recognized as a core development component, only to lose this status gradually due to the change of demand from modernized national labour markets, Nepal's TVET background can be seen as substantially different. Where in European context crafts were aligned and harmonized through the

establishment of guilds and later unions, they were defined by the caste system in Nepal and other Asian countries such as India and Sri Lanka as occupational castes. This meant that even more than the Western categorization in which people carried their craft as their last name and often children followed their parents in their profession, families were bound by ethnics to a specific profession (Uprety, 2004). Occupational castes, such as carpenters, gardeners, blacksmith, cobblers and leather tanners are considered low caste and their identity is established through their profession (Gurung, 1998). Their role in this identity is to serve the other caste by providing craftsmanship, often repaid by food or shelter instead of money in former times and rural areas (ibid).

As a result of this historic development, one could state that craftsmanship was valued different in the Nepal context as it was the 'business of low cast and untouchable people' and it was hardly valued in terms of profit return. Besides this, specific professions were nearly a closed circuit of recruitment and apprenticeship within the respective occupational caste as they were interlinked with ethnicity and identity, they only way to enter a profession other than the one your caste prescribed was to become part of that caste (through marriage for example) which again was not a common practice due to the rigid hierarchies amongst different castes even if both being perceived as low castes by outsiders (Uprety, 2004). The technical developments within the vocational sector, industrialization, urbanization and modernization that have entered Nepal have challenged these traditional divisions with machines replacing certain manual labour, new technologies requiring different skills and import of products and large scale production upsetting traditional structures in the vocational labour areas.

At the same time, vocational skills also gained appreciation over the last decade due to the growing demand of skilled labour abroad and the large group of Nepalese people that responded to this (the current estimation is that for the last years around 1000 Nepalese leave the country to perform unskilled and skilled labour per day).¹ As a result, Technical and Vocational Education and Training (TVET) has received an increased attention in national planning and resource allocation and the Ministry of Education currently is developing a technical secondary stream for grades 9-12 to make available besides the regular secondary stream. However, the changes in the traditional perception of vocational skills, as well as the implementation of TVET provisions and plans, are still at very different levels in different parts and communities throughout the country.

Venues of TVET in Nepal

At present times, there are both public and private providers of TVET in Nepal. The main public provider institute is the Council for Technical Education and Vocational Training (CTEVT), being one of the central level agencies of the Ministry of Education. The council was constituted in 1989 and has the responsibilities to improve the quality and cost efficiency of the TEVT sub-sector to increase access to this sector for marginalized groups. Where this council has been the main implementer for vocational and technical education and training through its affiliated schools including annex schools and certification of services provided by the private sector and organizations it is shifting towards a stronger role as a facilitator and regulator of the vocational and technical education sector in Nepal. Currently TVET is provided besides CTEVT by annex schools, technical faculties of universities, private providers and NGOs. Currently, Ministry has decided that the TVET will be introduced in the community secondary schools from grade 9 onwards.

Benefits of TVET in Nepal

The Nepalese society consists for over 87% of people that are enrolled in traditional occupations and means of supporting their livelihood (CBS, 2002 and other reports). As argued in the introduction of this document by Tilak (2002), technical vocational education and training contribute to greater efficiency and increased return

¹ Launch of Enhanced Vocational Education and Training (EVENT) program, MOE 2010

for labour. Having the major part of the country in different levels depending on traditional skills and professions, the obvious benefit of strengthening TVET in Nepal would be that it can be expected to contribute significantly to the household economics on a national level thereby reducing the poverty level.

The second major benefit of establishing an appropriate, accessible and strong TVET sector is linked to the specific role that Nepal fulfils on the international labour market. The current estimate is that in the Gulf countries alone over 4 million Nepalese citizens are employed in skilled and unskilled labour, on an annual base, over 350,000 additional people leave the country to work abroad (CBS reports). By far the most of these people are recruited to perform unskilled labour against low to very low wages against international standards. Even so, remittances sent back by these people were estimated to top 1.4 billion US\$ in the last year, thereby being the number one income for the country. Broader access to TVET for these people is likely to increase the number of skilled labourers leaving the country which in effect will increase the economic returns of their work abroad.

A third major benefit is the positive effect a stronger and relevant TVET sector could have on the current large number of young people in the country that neither has access to higher education or the labour market. Besides the fact that a strong TVET sector could lead to improved chance of being able to create an income afterwards (both in country or abroad) it also minimizes the number of idle youth in politically instable times and thereby reduces the risks of them being employed to support pressure mechanisms for political and other causes. Besides this potential benefits could be a larger scale production of higher quality products thereby strengthening export and reducing the need for import on these products and the production of higher quality food items that could improve general health and wellbeing.

Challenges of TVET in Nepal

As presented in the background of TVET in a Nepalese context, the degrading perception of vocational and in some cases technical education could have been brought about by the traditional context of these skills being linked to occupational castes and causes a general consensus that pursuing these skills is secondary to enrolling in secondary and higher education.

The second major challenge that can be seen is that TVET requires relative more and intensive resource allocation to be successful in comparison to general education as it often requires workspace, tools and resources. At the same time, budget allocation to the TVET sector has remained minimal in comparison to for example the overall national budget allocation to the education sector and the basic education subsector (MOE, 2011).

A third challenge is observed in relation to the available human resource component to enable a strong TVET sector. TVET quality is depending on the quality and expertise of the trainers available. With Nepal not having a longstanding tradition of quality TEVT provision across different parts of the population it will take time to train and recruit a sufficient amount of trainers that withhold the skills needed. It could be noted that the EVENT concept paper (2010) has pointed out the potential of large numbers of Nepalese returning from performing labour abroad that could perhaps fulfil this demand after being fast tracked through master trainer courses for example. Other challenges observed are the measurement and rating of skills upon completion of training and the economic situation of the country that might cause the demand or reward for TVET skills provision to remain undervalued.

Issues in taking TVET forward in Nepal

While there is no one-size-fits-all model for technical vocational education and training, globalisation is putting pressure on these nationally distinctive features of TVET systems and labour markets. A country can respond to these pressures most effectively if they have a good understanding of about commonalities and differences. Some of the ways are as follows (Hoeckel, 2008; Grubb, 2006 & Chappel, 2008);

- Provide information to TVET students
- Support students council in TVET schools
- Represent TVET schools
- Run specific TVET projects
- Run campaigns
- Lobby towards stakeholders

A broad outline of the TVET development plan for the near future is required by considering the following three major elements (ibid):

- **Equitable access to TVET:** It includes the renovation of training establishments, the construction of new centres, and activities contributing to increasing and diversifying training provision and training approaches;
- **Improving the quality and relevance of TVET:** In this sphere activities, target, initial training as well as continuing capacity-building for the various different TVET operators (trainers and administrative staff) and the design and introduction of a quality approach in training systems and TVET technical services;
- **Strengthening the management and administration of TVET:** It includes work on planning, strengthening sectoral administration at the middle and micro levels and developing policy, strategic and regulatory frameworks.

In order ensure the access to, quality of and management of technical vocational education and training, a framework is required for a better coordination among the technical and financial partners and the technical ministries responsible for technical vocational education and training. Specific measures are planned to strengthen national capacity, particularly in the fields of institutional reform and the autonomy of training centres, programming and budget implementation as well as monitoring and evaluation.

The development of TVET system in Nepal is in initial stage. Many more lessons can be gained from the best practices incurred around the globe. The first implication to Nepal is that it is necessary to strengthen the maintenance of existing infrastructure, control of operating costs, the training of the trainers, the revision of curriculums in line with the needs of the labour market, and the decentralisation and development of revenue-generating activities. In order to improve the performance of training systems, support is required for building management capacity, the development and introduction of a national qualifications framework, the improvement of training quality, increasing employability, the improvement of access for women and vulnerable population groups (minorities, disabled people, rural areas), and increasing the number of individuals trained, for a lower cost, in public and private vocational training centres.

In the future, there is a need for developing and introducing a skills-based qualifications framework (paradigm shift), revising curriculums and improving training quality, and looking additional resources and mobilizing them more efficiently which will help to develop TVET system in Nepal.

Conclusion

Even though TVET has proven to directly contribute to the societal wellbeing and socio economic status in some other countries and has a longstanding tradition it currently faces depreciation and severe quality issues. This is mainly due to the fact that on one hand it is regarded as a 'lower' type of education, yet at the same time requires relatively more investment and resources when compared to other types of education.

There is a need to think school-to-work transition by looking at how technical vocational education and training supports the integration of the young people into the labour market. First of all, we need better data on how TVET is structured in different countries and the challenges TVET systems are currently

facing. Based on the learning and experience from best practices, there is a need to develop some strong models of where TVET systems and the labour market are working well to meet the needs of students and employers.

We also need a clear benchmark of the current skills of the labour force and a better understanding of how these skills are acquired, enhanced or lost. It will cover general competencies - things like literacy and numeracy - and how these skills are used at the workplace. Looking forward, we need a vision of future skills needs. One of the biggest challenges in designing education systems is that we need to have capacity to look the shape of national economies in 20 to 30 years. Where skills requirements are volatile, unpredictable or firm-specific, continuous education and training and a strong interlinked public and private sector are the obvious answer. This again requires the private sector to be actively involved in policies, strategies, steering and supervision for TVET to be of quality, appropriate and sustainable and having access to the requisite resources.

Nepal's TVET strategy should focus on improving access to training through the development of the public and private training network, diversifying the range of training, and focussing on equitable access women and minorities, retraining workers at risk of losing their jobs, and implementing the national action plan. There is a need to have substantial human, physical and financial resources for the operation of the TVET system in country. Political will is also important. Given the difficulties experienced by the sub-sector (low relevance, high costs, inequities), it is urgent to improve TVET's internal and external efficiency through the introduction of alternative training systems that will reduce training costs while ensuring that the training produced is more relevant. This reform must be carried out in collaboration with all vocational training operators, at the planning, implementation and evaluation stages. With this framework, it will be possible to take better account of the needs of the business world when designing training.

In addition, skills acquired outside the formal education system should be recognised and given value through the development of a national framework for qualifications and validation of professional skills. One challenge is to strengthen the links between the interests of the State and those of the productive sector. All these actions are intended to make the TVET system more attractive to people and to combat the poor image of vocational training courses.

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Efficiency and Effectiveness of Vocational Training in Nepal

Pushpa Raman Wagle¹

Abstract

This paper is an attempt to give a glimpse of what the SEP tried to do, what it achieved in spite of the barriers encountered, and which direction would make such projects or training more effective in the future .SEP was the first CTEVT project focused on the short term training on a mass scale . It was quite challenging to meet its objectives in the beginning but with the intensive efforts of the project with its partners- CSIDB, DCSI, DOL, Private and Public TTPs, it has been able to train the number of youths it had planned with less than 2% dropouts only. 72% of graduates have been employed. The project crossed its target of 50% women and 25% dalit by training 53.4% women and 25.02% dalit. The capacity of the partners has been strengthened by installing TMIS and GIS in CTEVT, by preparing and revising 63 short course curricula, by imparting training to 200 managers, 200 supervisors and 860 trainers and by enhancing the capacity of 60 private training providers, CTEVT, DCSI and CSIDB. The cabinet has approved the Intent TEVT policy in 20 September, 2007 prepared by the project. Based on the project management experience, barriers encountered during the project implementation have been listed and recommendations to address them are also proposed in the paper.

Introduction

Efficiency (the utilization of minimum resources to achieve particular objective) is accomplished by doing things right. Effectiveness (the maximum utilization of resources) is achieved by doing right things (high priority objectives). These are the principles taken from MODEL-NETICS developed by Main Event Management Corporation, USA. Training will be wastage if it is not efficient and effective. Skills for Employment Project (SEP) has been tried in the land of Nepal to achieve what it could do through training intervention. This article is an attempt to give a glimpse of what the project tried to do, what it achieved in spite of the barriers, and which direction would make such projects or training more effective in the future. Based on the information below, you can assess to what extent the project has been effective and efficient in meeting its stated objectives.

Overview of the Project

SEP was introduced in Nepal with an aim to reduce poverty and promote stability by increasing engagement in wage and international employment and self-employment by an agreement between Asian Development Bank and Government of Nepal (GON) on 2 February 2005. As the first project with emphasis on Market Oriented Short Term (MOST) training in Nepal, it is designed to be conducted with ADB loan and grant from GON within seven years and three months which will end in June 30, 2012. Ministry of Education (MoE) as an executing agency of the project, it is being implemented by Council Technical Education and Vocational Training (CTEVT) in the partnership with Department of Labor (DOL), eight districts of Department of Small and Cottage Industry (DCSI), and 12 districts of Cottage and Small Industry Development Board (CSIDB), eleven training institutions of CTEVT as well as many private technical training providers (TTPs) in the country. The project was designed to train 80000 youths including poor, women, Dalits, and facility deprived people for one to six months initially. Later it was revised to include at least three months training which meant 390 hours and the number was reduced to 61000 youths considering the added length of training duration.

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The project objectives are to:

- Increase access to MOST skills training for 61000 youths comprising 52000 from central based training providers and 9000 from community based TTPs.
- Strengthen capacity of key agencies
- Develop and articulate a new technical education and vocational training policy.

Status of the Project in Terms of Training Implementation

A total of 60292 youths have benefited including 53.4% women, 25.02% dalit and more than 80% disadvantaged groups as of June 15, 2012. This is 98.8% achievement of the targeted number. The overall dropout comes to be about 2%. The following tables show the overall status of the MOST training including Gender, Caste and Ethnicity (GCE) perspective.

Table 1: Sector wise beneficiaries in MOST skills training through central based including GCE.

Sector	Benefited trainees nos	Women	Dalit	Disadvantaged
Agriculture and Animal Health	11474	9341 (81.4%)	2854 (24.9%)	10546 (91.9%)
Engineering	22834	5577 (24.4%)	6116 (26.8%)	17349 (76%)
Hotel Management and Tourism	6756	3907 (57.8%)	1496 (22.1%)	5784 (85.6%)
Others (Security guard, Tailoring, Hand embroidery, caregiver, beautician etc.)	10956	9628 (87.9%)	3006 (27.4%)	10566 (96.4%)
Total	52020	28453 (54.7%)	13472 (25.9%)	44245 (85.1%)

Table 2: Sector wise beneficiaries in MOST skills training through community based including GCE.

Sector	Benefited trainees nos	Women	Dalit	Janjati
Agriculture and Animal Health	1860	1179 (63.4%)	342 (18.4%)	538 (28.9%)
Engineering	3632	784 (21.6%)	705 (19.4%)	1234 (34%)
Hotel Management and Tourism	940	468 (49.8%)	161 (17.1%)	370 (39.4%)
Others (Security guard, Tailoring, Hand embroidery, caregiver, beautician etc.)	1840	1344 (73%)	404(22%)	552 (30%)
Total	8272	3775 (46.6%)	1612 (19.5%)	2694 (32.6%)

Barriers to Implementation of the Project

It was not easy to carry the torch of project goal with the partners who had their own difficulties to face and responsibilities to bear. The project had to encounter the multi faced problems in course of its management.

1. Delay in loan effectiveness: The loan of US \$ 20 million dollar was effective only after 15 months from the approval date. That way the project could not start in the projected time.
2. Frequent change of Project Manager including project staff: The project saw five Project Managers (PM) during its lifetime. The first two worked less than five months, the third one for 18 months, and the fourth and fifth for 2 years and three months .The staff on key positions in community level were also changed frequently.

3. Lack of ownership and commitment in the partners: CSIDB and DCSI could not demonstrate much ownership and commitment in implementation of the project initially. DOL could not materialize to install Labor Market Information System (LMIS) and Employment Service Centre (ESC) in Biratnagar, Kathmandu and Dhangadhi in spite of the project's support. Project installed TMIS and GIS in CTEVT are functioning at slow speed.
4. Target group in MOST skill training: The project could not recruit those people for training whose qualifications were higher than SLC in spite of their interest and aptitude in MOST training.
5. Low frequency of monitoring: A total of three Monitoring Officers based in Itahari, Bharatpur and Nepalganj each had to monitor the whole program from September 2009. One each was added in Butwal and Dhangadi from September 2010 Even this was insufficient which resulted into less frequent monitoring visits to the training venues. External Monitoring and Evaluation Consultants were also not hired from the very beginning of the project.
6. Delay in incorporating feedback in curricula: The ADB mission and the project received the feedback from the implementers that some curricula were lengthy and incompatible to real work situation and the implementers had no authority to change them without the consent of CTEVT which was till a lengthy process. Further, the curricula in English were incomprehensible for the trainers and the trainees.
7. Delay in obtaining skill test results: The TTPs had to wait for more than one month for skill test results. This resulted into delay replacement of incompatible skill standards which neither matched employer needs nor curriculum standards.
8. Lack of TMIS/LMIS to develop many training packages: There was neither TMIs nor LMIS to help develop procurement packages.
9. Lack of HRD (Human Resource Development component in Project Implementation Unit): The project did not have any provision or incentives for performance improvement or encouragement for good performance like long or short term training, exposure visits to abroad etc to the staff of PIU, CSIDB or DCSI or DOL.
10. Dissatisfaction in stipend distribution: The project provided substantial benefits to 50% of the participants which included Rs. 3000 for the 25% and Rs 1000 for the remaining 25% trainees per month. This system disturbed the smooth running of the training as the 50% expressed their dissatisfaction against this throughout the training.
11. Lack of post training support Trainees who were poor could not afford to buy tools and equipment to employ them using the skills learnt during the training. That way, they had little encouragement for self employment
12. Limited access of the graduates to government jobs: The graduates from the MOST training had limited opportunity to government jobs because of the preference of the government to the academic certificate holders in job placement
13. Lack of needs assessment data for foreign employment There was no data of needs of foreign job market. The Rapid Market Assessment or TNA conducted by TTPs could not provide such data.
14. Insufficient number of TTPs: Only a few TTPs were capable to conduct the training by following the standard set by the project. Such TTPs were insufficient in the rural areas of the country.
15. Duplication of training The same training could be received by the trainees as there was no well established LMIS or TMIs for verifying the data related to such issues.
16. Little respect for labor The caste system of the country was still a barrier to the acceptance of the skill service for the high caste persons provided by low caste skilled worker. Even to-day, the kitchens of most Brahmin families would not accept a bearers or cooks from the low caste family irrespective of whatever level of skill he/she has.
17. No provision to procure vehicle The project needed enough vehicle resources for monitoring evaluation activities but there was no provision to purchase vehicle for such purpose.

18. More time consumed by procurement related activities: The decision made by the district steering committee pertaining to community training has to be reported to ADB which means approval by them. The translation of the decisions into English and back and forth of correspondence between PIU and TTPs as well as ADB was as much time consuming as around 70%. A total of 124 packages were procured for community and PIU. This meant only 30% of time of the key staff could be devoted to quality assurance, monitoring and evaluation of training activities.

Achievements of the Project

In spite of the barriers, the project could achieve its target which is as below.

1. Dalits and women graduates from MOST
Out of 2999 graduates, 449 dalits and 756 women graduated from the training programs in 2008. This was 15% dalits and 25 % women. Similarly among 6283, total of 1173 (19%) dalits and 2613 (42%) women graduated in 2009. In 2010, out of 19611 graduates 4112 (21%) dalits, and 9689 (51%) women graduated from different programs. Out of 15941 graduates 4819 (30.2%) were dalits and 9399 (59%) women in 2011. Overall 60292 have benefited including 53.4% women, 25.02% dalit and more than 80% disadvantaged groups.
2. Employment status of graduates
The tracer study and employment verification study of the center based and community based graduates showed that about 70% were employed. The sample size of the study was about 25% of the graduates. The types of employment included self wage and foreign.
3. Capacity strengthening of key agencies
 - Geographical Information System (GIS) and Training Management Information System (TMIS) have been established in CTEVT.
 - Department of Labor (DOL) was supported to establish Labor Market Information System (LMIS) though it was not operational.
 - A total of 63 short course curricula have been prepared which included development of 37 courses and revision of 26 courses.
 - A total of 200 managers, 200 supervisors and 860 trainers have been trained.
 - The capacity of 60 training providers, CTEVT and DCSI and CSIDB has been enhanced.
4. Supporting policy development, articulation, and implementation
The cabinet approved the Intent TEVT policy on 20 September, 2007 (Aswin 3, 2064). Ministry of Education submitted detailed policy framework to ministerial cabinet.
5. Change in life style of the graduates
Of course, the final evaluation of any training is the extent to which the trainees are able to transfer their skills into the job and how much gainful is the job itself. Some sample instances of the project showed that the graduates from the rural areas have earned Rs 3000–9000 per month after the training. This income has been a source for an improved standard of living in the family and society. The preceding sections have given little glimpse on this. However, a project should also be evaluated on the impact it has made on living style of the participants after the training. In one situation, off-season vegetable participants and their parents in Darchula and Bajhang of Nepal; they did not use to eat vegetable in their meals before but after the training they did not only produce and sell the vegetable products but also use in their daily course of food. They also reported how they had found improvement in their health. This was not less satisfying because such style could have multiplier effect in the family and society the participants lived and worked.

Recommendations

Based on the experience of the barriers and lessons from the project, the following recommendations are made for any future projects or training endeavors of this nature in Nepal.

1. Loan should be effective within three months from the loan approval date.
2. Project staff that is familiar with ADB procedures should be selected and it also should be ensured that there is no frequent change on the staff especially on key positions.
3. Regarding the ownership of the project in the partnership model concerned agencies should be full time staff to make the project component functional. Private institutions should be chosen for implementing the LMIS/ESC in public private partnership modality of operation.
4. Regardless of their education level, training should be provided to the people who are unemployed and who are likely to continue using the training skills after receiving the training.
5. Field monitoring offices should be established at least one in each region. Resources should be provided for monitoring three times in each training cycle (pre-training, during training and post training). External Monitoring and Evaluation consultants should be appointed from the beginning of the training.
6. Curricula, in consultation with curriculum division of CTEVT, should be developed or revised by the implementers as per employer needs. The Curricula should be translated in Nepali which should be handed to the instructors and trainees before a training program starts.
7. Skill standards should be compatible with curricula and employer needs. The skill test results should be published within 15 days from the test given. Skill testing office should be expanded at least in regional levels.
8. Procurement packages should be developed on the basis of LMIS and TMIS data. Procurement activities should be completed before 30% of the project is elapsed. Public TTPs should procure using recurring cost for delivering the MOST training as per need.
9. Incentives to the partners should be provided on performance basis.
10. HRD activities should be part of the project and provided in the form of long/short term training foreign exposure visit etc. to the staff based on their performance and need of the project.
11. Stipend should be distributed to all trainees.
12. Revolve fund should be activated. Tools and equipment should be provided to those trainees who cannot afford to purchase them.
13. A skill oriented project should be so designed that there is on going assessment of the foreign industries to identify the needs for job placement.
14. LMIS, ESC and TMIS should be functional before delivering the MOST training.
15. Grant money should be made available for employment verification and purchase of vehicle for monitoring and evaluation of training activities.
16. The procurement procedure must be shortened as far as possible.
17. CTEVT should increase its capacity to provide training of MOST nature and thus take fast track to train more people with the skills needed for the world of work.

Conclusion:

In an economy that is unlikely to accelerate its growth until the present political uncertainties are settled; only better trained and qualified workers can find a job mainly through self employment or migration. There is no better way out than to address the urgent and large needs for the promotion of practical skills dictated by a vibrant demography that brings every year hundred of thousands of barely educated youths in the labor market through an intervention called expanded vocational training like MOST training that came in the form of SEP. It is a bitter truth of many developing nations that there is much hue and cry in the advent of a project but little is done to sustain the achievements of the project after its completion. *Many projects have landed in*

Nepal and will do so in many years to come, but what have we done or will do to sustain them? Are our project partners prepared to answer the above questions responsibly? Many donors and investors in education and other sectors are in search of answer of this question. The end of a project is the beginning of the new responsibility that is, sustaining the accomplishments, achievements, outcomes or return on investment and nurturing them so that they bear fruit for endless future. It will be only then when the question is satisfactorily answered that every paisa paid by the poor Nepalese in the form of tax and the loan on the back of every Nepali will be better utilized.

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Education and training for economic growth: what can we learn from a value chain approach?

C. Howard Williams, Ph.D.¹

Each economy is now in a global competition to grow and to create the jobs that are needed for today's societies. To thrive in this competitive environment, skilled workers are needed to serve as "commercial amplifiers" to support growth industries. Competitive labor costs do not, on their own, guarantee success in a highly competitive global market; rather, they can trap countries in a cycle of poverty. A systematic and sequenced approach to identifying and developing workers' skills can increase their value added and create more and better-paid jobs.

In emerging economies, the percentage of low skilled jobs is shrinking compared with middle and upper skilled jobs. While many adults need retraining to move from declining labor markets into emerging ones, the need to provide youth with the necessary knowledge and skills for meaningful work is especially acute. Basic education is expected to provide young people with a foundation of literacy, numeracy, and cognitive skills that they can build on to access jobs in evolving economies through the acquisition of vocational, technical, or professional knowledge and skills. Even with national systems of public education and the existence of many private education institutions, how do we know that graduates are getting the skills that are needed in today's workforce and how do we know that the jobs they are taking are those that contribute most productively to economic growth? A value chain analysis can help us answer these questions.

What is a Value Chain?

A "Value Chain" is a series of processes and activities through which finished products or services are made available for sale, starting with the "raw material" and its transformation into the final product or service. For example, in a textile/apparel value chain, fiber is supplied from producers to fabric makers, who service tailors or factories, who design, cut, sew, finish and pack clothes to be sold to wholesalers or retailers for final sale to the public. A value chain also can show ancillary value chains that support the main value chain, such as construction (housing or building expansion), agribusiness (food for workers), and transportation (to move the raw and intermediate materials and finished products). What is particularly helpful about the value chain analysis is (a) analyzing each link in the chain to ensure that it is a viable activity that efficiently adds value to the process and product, (b) identifying opportunities and constraints for improving the efficiency of each exchange, and (c) identifying the skills profile for each activity in the process, including any gaps in skills that serve as constraints to adding value to the product or service.

Which value chains should we focus on?

The relevance and quality of technical and vocational education and training (TVET) can be measured by whether employers value what TEVT graduates have learned and then demonstrate that value by employing them. If there is a high employment rate among TVET graduates, then the system is meeting the test of relevance and quality. For the TVET system to establish its contributions more specifically to *economic growth*, then those graduates will be employed within the value chains that offer the most robust contributions to the economy. These value chains will include export and domestic industries that are most productive currently and also, for economic growth, those value chains that offer the greatest potential for change and improvement. Value chains that demonstrate high performance potential are identified through a step-wise process that includes collection and review of data, extensive interviews with producers, manufacturers and industry experts (both in-country and in key end markets), surveys of key market actors, consultations with

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stakeholders, and secondary source analysis. In some cases, qualitative information may be all that is available.¹ In a country like Nepal, productive and high potential value chains could include the garment industry, tourism, carpets, tea, and newcomers such as subcontract software code writing and organic herb production.

Value chain workforce analysis: Implications for technical and vocational education and training.

The Council for Technical Education and Vocational Training (CTEVT) routinely conducts labor market surveys to confirm priorities for CTEVT-sponsored training courses. These courses provide the knowledge and skills currently in demand as identified by employers. The value chain analysis additionally provides information on what knowledge and skills are needed for those industries identified as most likely to contribute to economic growth. This additional analysis can provide the information that extends CTEVT's contributions beyond employment to economic growth.

Just as the mapping of value chains provides insights for how industries can increase their competitiveness, analyzing value chains with an employment lens can identify key junctures where upgrading workforce capabilities can lead to increased productivity.

An integrated workforce development tool places an analytical 'overlay' on a value chain, identifying relevant jobs and their respective formal and vocational training or technical education requirements from the beginning of the chain through its point of termination providing short, medium and long-term skills upgrading requirements. Through use of this tool, a full integration of value chain and workforce interventions enables the identification of points of leverage within a value chain that are directly linked to skills upgrading and allow workers to position themselves for job opportunities. An illustrative example of a workforce overlay for the garment industry is included in Figure 1 below.

This type of analysis is a critical component of skills upgrading strategies in that it addresses not only the jobs of today but more importantly next-generation opportunities. Additionally, this tool enables service providers to train workers for specific entry points and future movement along the value chain. For example, while micro-entrepreneurs need basic technical training to become more productive, e.g., in sewing machine use and maintenance and time and motion management, and safety skills. Small and medium-sized workshops (10–15 employees) need more sophisticated technical skills e.g., design, pattern making, cutting and finishing to serve the domestic uniform and tourist clothing markets.

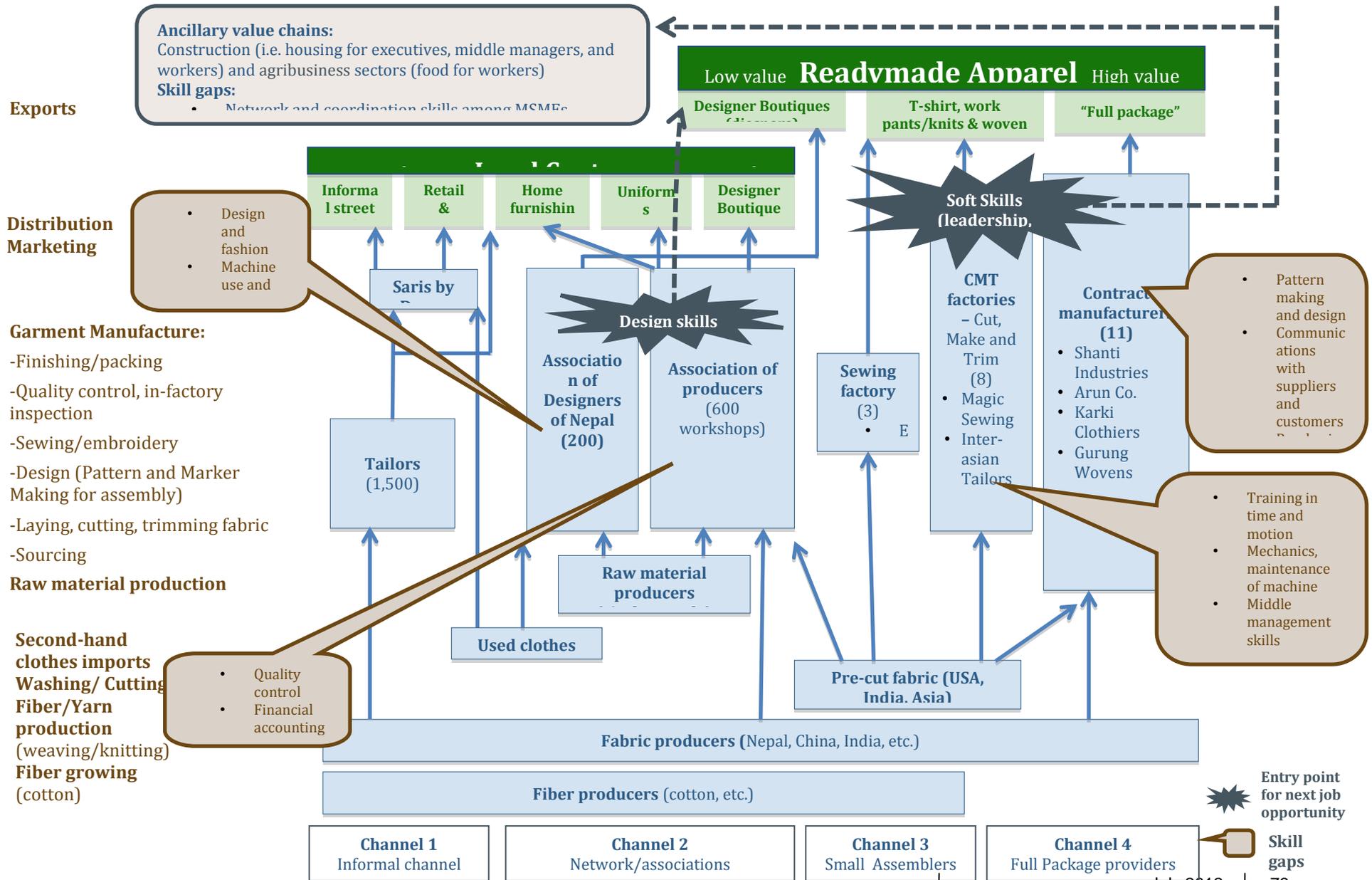
Small assembly factories (50 employees) require improved management skills. Managers can also be taught how to source fabric directly and manage the delivery process, and how to meet basic standards for vendor compliance. Investing in technical skills to improve assembly worker productivity through time and motion training will only lead to incremental increased competitiveness today. Investing in soft skills through a sector-based leadership program, however, will enable factory workers to better understand the industry they work in and identify trends so they can transition to other jobs in similar or ancillary value chains.

As the garment value chain grows, ancillary sectors will constitute an important source of new jobs e.g., housing and food for assembly middle managers and workers, requiring the soft skills (leadership, strategic thinking, market analysis) workers need to make those transitions in the future and to take on jobs with higher responsibility. Other components can be identified in the value chain, such as garment washing services and prewashed garments for shrinking or trends in finishes; embroidery and printing services; and packaging materials.

¹ Sector Competitiveness Analysis Tools (2010), developed by DAI for the World Bank Group, provides detailed reference information for conducting a sector analysis and mapping value chains, including a literature review and extensive bibliography.

It is also important to note that the value chain workforce overlay highlights knowledge and skills that must be effectively provided by basic education, such as literacy and numeracy, and by secondary and higher education, such as management and accounting, marketing and advertising, and strategic planning.

Figure 1: Garment Industry Value Chain Workforce Overlay (illustrative)



Additionally, soft skills described by Prof. T.N. Sharma¹ and Dr. V. Karki², such as critical thinking, effective communication, and adaptability are needed to effectively lead and work with teams, adjust to changing markets, clients, and circumstances, and to continuously innovate and improve value chain products and processes. These soft skills should be included in each phase of education, beginning in basic education and built upon through TVET and higher education.

The value chain workforce tool is critical to workforce development interventions in that it is a process by which policy makers and sector practitioners can highlight and prioritize key junctures where upgrading workforce capacities can lead to increased growth and in turn competitiveness. This integrated approach also results in future sustainability as worker skills are upgraded and firms and micro-small-medium sized enterprises (MSMEs) become better able to respond to market demand and provide better quality products and services. Increased volumes of quality product flow yield access to new channels and even greater demand, creating a virtuous growth circle that can sustain itself over time.

An additional benefit of taking a value chain approach to analyzing the workforce needs of an industry is that the value chain analysis process is participatory with industry stakeholders and, in the end, should result in a joint action plan between both industry players and educational institutions. Ideally, the value chain analysis will not just inform the educational institutions about what skills are needed, but also lead to continued engagement of the private sector in curricular upgrading and development, including provision of guest lectures, development of certification programs, and internships, giving the private sector a direct partnership role with CTEVT for the preparation and employment of today's – and tomorrow's – workforce.

¹Tanka Nath Sharma, "Technical Vocational Education and Training Focusing on Soft Skills in Reference to School Sector Reform in Nepal," *Technical and Vocational Education and Training Development Journal*, no. 10, Vol. 1 (2010), 5-17.

²Vishnu Karki, "Employment, Skills, and Education in Nepal: a Brief Account," *Technical and Vocational Education and Training Development Journal*, no. 10, Vol. 1 (2010), 5-14.

TVET OF NEPAL IN THE WORLD OF WORK

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Abstract:

Nepal is a country of diversified geographic, cultural and demographic characteristics. Despite great attraction in TVET, workforce of Nepal is facing un/under employment. Side by side Nepal is also known as a supplier of unskilled workforce in the world of work. It shares many challenges and issues that are fundamental to improve the quality and relevance of TVET as a means of human resource development. Nepal must consider a logical strategy for human development in which TVET plays an important role. Critical issues that must be considered when planning TVET programs to develop academically strong, technically and vocationally specialized human resource are: Academic knowledge and skills, related technical knowledge and specialized technical and vocational skills.

The success of TVET in any developing country can be considered as a key indicator of the country's TVET development. Any country that evolved into a technological advance, TVET must have played an active and vital role. Learning for work and gaining strong academic capabilities is the joint necessity of TVET graduates to get fit in the world of work, and of a variety of stakeholders in the formal and informal socio-economic environment.

With rapid transformation of societies in social, political, economic, technological, and education spheres, there has been a change in the perspectives on the need and nature of TVET. Production of academically strong and technically specialized human resource has begun to emerge as new challenges due to the demand of nature of job market. This article provides a brief account of the progress needs and discusses a few important emerging issues of serious concern.

Development of TVET in Nepal

An Aurvedic school was established to train Aurvedic physicians in 1929 which can be accepted as one of the pioneer formal attempts to produce technical human resource in Nepal (CTEVT, 1994, p.2). Since then, various attempts have been made in order to develop technically capable human resources in Nepal. Different institutions have been established and technical knowledge and skills have been transferred.

Training for compounders and dressers started in 1934 in the newly opened Civil Medical School. A program for the middle level-nursing workers began with the formation of a nursing school in 1956 under the Directorate of Health Services. Separate school for training another category viz. Health Assistant started in the same year with a two year course. An AHW School was started under the aegis of the Ministry of Health in 1962. The training of a cadre to provide midwifery care was started in 1958. Similarly training for agricultural technicians was started under Ministry of Agriculture and Mechanical training center was started in Balaju Technical training center. Government made its efforts to attach vocational education to general education from grade 6 to 10 in the 1960s. The main purpose of this attempt was to impart vocational knowledge and transfer technical skills to the students of grade 6 to 10. In general schools, 20 percent of the credit was allotted to a vocational subject and in vocational schools, about 40 percent of the time was allotted to vocational subjects (CTEVT 1994, p.2).

However, the graduate of secondary schools could not compete with the students who graduated from vocational schools (CTEVT, 2005). Then, the government realized that more intensive skills should be given to the students for getting jobs in the market. One hour vocational teaching in school was not adequate to

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obtain intensive skills (CTEVT, 2005). Thus, the idea of establishing formal technical schools for providing intensive skills and more focused knowledge on vocational subject emerged. Hence, ultimately, various efforts made by the government for producing basic and mid-level skilled human resources supported to form the Council for Technical Education and Vocational Training (CTEVT).

It was contended that since education is considered the key to effective development strategies, technical and vocational education and training (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development. With this, TVET has to re-orient its agenda for action so as to continually provide scientific and technical skills in relevant and responsive programs, and consequentially develop a new generation of human resources.

The overriding objective is quality of life.

TVET is the most effective means for society to develop its members' potentials to respond to the challenges of future. However, schools and other institutions of the formal education system alone cannot achieve education and training for sustainable development in terms of human resources. In Nepal, production of TVET is the oversight responsibility of related ministries responsible for providing services, although some specialized vocational training programs (in agriculture, health, transport, etc.) fall under the supervision of CTEVT and Universities.

Technical education is giving technique to deal certain skill skillfully with giving scientific logic behind. Technical education itself is a specialized education. What was a single skill yesterday will change into bundles of skills tomorrow. Caring a needy person was a single skill known as nursing, now rapidly changing into caring in different specific stage with different levels of standard. The primary nurses were providing general care for all needy persons but the modern nurses are providing specialized care for specific needy person. Not only in nursing but each and every sector of technical fields is rapidly changing from comprehensive technical education to specialized technical education. What is now comprehensive was specific in earlier time. Reality is constructed and re-constructed depending upon volumes of information gathered, experience gained and need felt.

Context of Specialized TVET

Annual per capita income of Nepal is USD 340 and the ranks for human development index is 138th position, 31% people are living below poverty line, and estimated unemployment rate is 3.8 percent. 300,000 to 350,000 people enter into the labor market each year (CBS, 2005). Increasing trends in foreign employment are dominated by unskilled category. About 85% of students who enrolled in primary level but are forced to quit the school before SLC (DoEd, 2006). Daily about 1000 Nepalese are flying aboard to enter in the job market. Majority of them are unskilled. There are 5 TEVT Approaches: Those are Universities/Colleges, Ministries / Governmental Line Agencies, NGOs/ INGOs, Organized and Unorganized Private Sector and CTEVT (constituent and affiliated institutes)

All TVET providers are providing comprehensive TVET based on modification of out dated curricula of about half a century old. It hasn't really fundamentally changed for the past 50 years; it's (only) changed in small ways (*Larson, 2010*). Curriculums of that time were developed to fulfill the objective of providing minimum services to the maximum persons. It was the demand of that time due to unavailability of technical and vocational workforce of any sector especially in the rural areas. But now, national and international job markets need academically strong and technically specialized technician to achieve the objectives of commodity production and maximum specialized service from one person. Therefore, majority of TVET products are denied of job opportunities from national and international job market due to lack of employable skills at hand. TVET organizations are not capable to accommodate the employment need of the people of

un/under employment due to lack of academically strong and technically specialized human resources to fit in national and international job market.

I've been researching the pros and cons of specialization versus generalization. There's a debate about which one will serve a person better throughout their career. In conversations with friends and colleagues and observing the reality of world of work, my impression has been changed towards specialized skills with strong academic knowledge. They've indicated that having a comprehensive knowledge has diversified their opportunities by allowing them to adapt and apply their knowledge into a variety of TVET. Specialized Skill delivers its services and products to valued clientele organizations without compromising in the entrusted quality of skill as well as academic ability helps to think and deal intellectually in the TVET sector. TVET of Nepal still rely on the traditional curriculum and formal classroom lectures, expecting students to retain large quantities of information that they may or may not use. Some experts note that students are at the mercy of whatever situations present them when they're on a practical rotation.

The educational advocates say that now is the time for TVET to catch up and offer new models and ensure that TVET graduates are well prepared to meet the challenges posed by an ever-changing job fields. Nepal is caught "in a vicious circle of low enrollment, low levels of literacy, low levels of skilled and academic labor force, lower rates of economic growth, and lower levels of living" (Tilak, 2001, p. 233). The low level of educational development in South Asia has constrained "the immediate potential for human resource led development," and it has also "stunted the future prospects for rapid human development in the region" (Haq and Haq 1998).

The role of technical and vocational education and training (TVET), especially in relation to delivering quality education, has been the subject of considerable discussion, research and policy reforms. TVET is now perceived largely as a possible second chance educational opportunity for students who are not academically inclined. Moreover, in response to the rapidly changing nature of the workforce and the skills required to perform effectively within the changing context, TVETs are now being called upon to provide programs that support greater understanding of the world of work. Such programs are intended to equip students with those skills and abilities that they would need to use in their working lives.

Governments in many developing countries today are accelerating their investments in technical and vocational education (TVET). Differentiation of occupation in the developing economies requires TVET graduates with specialized skills and strong academic performance. Because of changes in production processes resulting from technological advances, the nature of the demand for skills, both in terms of quantity and quality. Modern technology requires fewer highly qualified middle and lower level skilled personnel. Vocational education can produce exactly this kind of human resource.

Vocational education would contribute to such progress, both by reducing unemployment, through creating employment in the fields of pre-vocational specialization and self-employment, and by engendering a higher propensity for labor force participation at the end of TVET, improving productivity, and correspondingly resulting in higher graduate earnings. Vocational and technical education can establish a closer relationship between academic ability and specialized work.

As an antidote to urban-biased elite education, vocational education will promote equity with a rural bias and serve the needs of relatively poor people. Also as Grubb (1985, p. 527) states, vocational education has been seen as the answer to an enrolment problem: the tendency of some students (especially lower class students) to drop out of schools without occupational skills -- a problem that vocational education promises to resolve by providing a more interesting and job-relevant curriculum. More specifically, it is believed to be an effective answer to rural problems, "to alleviate unemployment; to reorient student attitudes towards rural society," to halt urban migration; to transmit skills and attitudes useful in employment (Lillis and Hogan, 1983), and as an important measure of development for disadvantaged youth in rural and urban areas.

Further, vocational education is considered helpful in developing what can be termed as 'skill-culture' and attitude towards manual work, in contrast to pure academic culture and preference for white collar jobs; and to serve simultaneously the "hand" and the "mind", the practical and the abstract, the vocational and the academic." (Grubb, 1985, p. 548). Some authors claim that too much attention and resources is given to comprehensive rather than academic and specialized TVET. Those are not fit to enter in national and international job market. It should be academically strong and technically specialized so much, so that UNEVOC-UNESCO contemplates on changing the name TVET to something nearer to "Technical Skill & Academic Knowledge Development for Employability".

Paradigm Shift

TVET of Nepal was established to achieve the objective of minimum service to the maximum people by the products of TVET. It was the time based need of TVET to produce graduates of comprehensive knowledge and skills due to scarcity of technicians for providing minimum essential services to the rural people. For example, the goal was set by ministry of health "Health for all by 2000 AD". It was based on providing primary health care to the rural people. Hence, technicians were equipped with general knowledge and skills of all subjects of health. Experts designed the models of TVET containing all superficial information of specific technical field like health, agriculture, construction and so on. The products are jack of all but master of none.

Now the TVET providing organizations have hundreds of institutes producing thousands of TVET graduates each year. All institutes are following almost similar curriculum and producing graduates of comprehensive nature. But, the nature of job market is already changed in Nepal. International job market also needs specialized TVET graduates having strong academic knowledge based on the level of TVET with specialized skills to provide specialized service.

By giving the examples of PCL nursing, graduates of PCL nursing are getting general knowledge and skills of all subjects covered in nursing sector and can provide all types of nursing care to all patients either in the hospital or in the community. Similarly PCL products of other sectors of health like general medicine, medical laboratory technology, pharmacy and others are getting knowledge and skills of all subjects of their respective disciplines. Similar conditions are for agriculture, engineering and other TVET products. It is sure that, they will serve in one sector in future. For example a CMLT graduate gets equal knowledge and skills about microbiology, biochemistry, hematology and histo-pathology. But there is separate unit in the hospitals for the investigation of these all subjects and that technician will work in one unit. A generalist can not provide the service like specialist. Then the issue is why they are getting knowledge and skills of all subjects of one discipline.

Proposed TVET Model for Nepal

University education is different from TVET. The former gives academic education and skills and the later equips with skills of specialized action to perform. A TVET graduates can not be competent without knowing the skills of catching opportunities of world of work and selling their skills at appropriate place and in appropriate ways. Therefore, TVET graduates need to be equipped with three types of knowledge and skills and need to continue as life long learning. A new approach ... so that education for the twenty first century will include all domains of learning incorporating academic, connected and specialized education to enable the learner to launch into a lifelong continuum of knowledge, values and attitudes, and competencies and skills (UNESCO 1999). It involves academic course, knowledge of related or connected subjects and knowledge and skills of specialized course. This approach is an attempt to integrate academic and vocational curricular components in order to promote academically strong and technically specialized work force (Crossley, 1990). We believe that the performance of graduates will be improved through continuous review of the curriculum to ensure that its relevance to the needs of the job market is maintained. For example,

nursing faculty need to have both in-depth clinical knowledge as well as the ability to teach nursing. This requires an ongoing assessment of the technological changes in the workplace as well as consideration of the non-technical competencies required by graduates.

Academic knowledge and skills

Academic education helps to develop intellectuality. With intellectuality TVET graduates could link technical skills with socio-cultural, political, economical, moral, ethical and environmental conditions of national and international context. Technology has wider implications that extend beyond science to subject areas like vocational education, social studies, art, ethics and value education (Ramadas, 2003). It helps graduates for giving logics and preparing scientific documentation based on the levels of their learning. Academic flavor also helps for continuing life long learning. It includes skills of written and verbal communication with appropriate knowledge of language, national and international socio-cultural situation and its connection with specialized skills as well as related economical, demographic and environmental conditions. A technology curriculum that involves 'learning by doing' will have to take cognizance of factors that range from the availability of human and material resources to ecological features, the epidemiological characteristics of the population and social relations in the locality (Ramdas, 2003). Therefore, 25% weightage for academic development in total course of a specialized TVET could help students to link their technical field with the world of work.

Knowledge of related or connected subjects

Different subjects of science related to the course, students need to know how to use in their specialized skills like physics, chemistry, zoology, botany, mathematics and other technical subjects which are connected to the specialized subjects. Knowledge regarding these subjects in the quality and quantity helps students to connect the facts and realities with their specialized course. The term technical education is also understood to include the theoretical and practical scientific knowledge and skills that permit a person receiving such education to solve technical problems in his/her specialty.

Science and other subjects could be seen as a means of supporting the development of language and of reinforcing literacy and numeracy. Therefore, my suggestion is including 25% weightage of connected or related subjects could help students for better performance in their technical field and also help them for giving scientific logic behind their specialized skills.

Knowledge and skills of specialized subjects

Specialized education, especially in fields that are in demand, can be compelling to students and displaced workers. Specialized education is just what the term suggests: a course of study focused on a particular subject. Specialized education is often focused on training to prepare students for the workplace. An essential aspect of technology education is practical work, including planning, design, construction and experimentation (Ramdas, 2003). An example of a specialized educational institution is a vocational school where students study skilled trades. The Indian policy documents on science and technology education emphasize the importance of practical work (Shukla, 2001).

For someone who is certain about his/her chosen profession, a specialized education can be the right choice. Vocationally oriented specialized education curricula can give the student a definite advantage in the job market. Besides the much focused course of study, specialized education programs often offer their students enclosure or other work-related experience.

Specialized education programs can often be completed in a shorter time than comprehensive education programs, which can save a significant amount of money. Because, from the curriculum development teams to textbook writers, teacher-trainers, teachers and students, innovation, improvisation and the building up of ideas and resources are needed at all levels. Many working adults pursue specialized education programs to

begin or resume their careers in the least possible amount of time. Therefore, it is my suggestion for including 50% weightage for specialized subject in TVET courses could help students for better performance in their fields.

Conclusion

Specialized education certainly has its benefits, but general education can also be valuable in successfully navigating the job market as well as in providing a well-rounded education. It is also possible to obtain both specialized and general education at the same institution.

Especially in challenging economic times, the value of a general education can come into question. In the current culture of schooling, there is a real danger that technology might be interpreted in a very academic way, as mere information about applications, processes and machines (Ramdas. 2003). However, there are usually far fewer electives offered in a specialized education program than there are for a comprehensive education program. Therefore, TVET has to be strongly linked with the world of work in companies and other employers. Efforts to achieve TVET for realistic human resources development requires a systematic and / or cooperation in the international framework under this objective.

One of the most critical challenges of 21st century is the attainment of full employment and sustained economic growth in the global economy. TVET can be synonymous to the backbone of quality life as it contributes significantly to promoting the interests of individuals, enterprises, economy and society. By making individuals employable and informed citizen human resources development through TVET activities contribute to economic development and to achieving full employment. They also help individuals to gain access to decent work and good jobs, and escape poverty and marginalization. The economy becomes more productive, innovative and competitive through the existence of more skilled and academic human potential.

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TVET in Dairying – a key intervention to flow urban money to rural areas

Upendra Pokharel¹

Abstract

Practical Knowledge is always million times superior to theoretical knowledge, and practice is the reflection of success. TVET in dairying is extremely essential to transform huge pool for Nepalese youth of economically generative cadre who are vital in contributing poverty alleviation for the nation. As majority of city dwellers start their day with a tea made from pasteurized milk and dairy product is most useful food for vegetarians, infants, children, elders and even all people consuming it as a nutritious diet, its production and processing technology must be expanded from city to the rural areas. TEVT on dairying could be a master key to unlock the rural unemployment and poverty alleviation in Nepal.

Key Words: TEVT, Dairying, Dairy products, Poverty alleviation, Rural, Urban

Introduction

Nepal is a developing Himalayan country where more than 82 % people dependent on agriculture (ESN, 1996). Milk is perceived as the perfect food & almost all people consume milk and milk products indifferent forms in the world. About 1.31 million metric tons of milk per year is produced in Nepal, of which about 11 % (0.14 million MT) of the national milk production enters into the formal sector. Approximately 95 % of the processed milk in Nepal is sold as fluid milk and 5 % is diversified in various types of milk products (Thapa, 1995). People in Nepal have been rearing livestock cows and buffaloes since the time of evolution. In the early days, these animals were raised particularly for the purpose of meeting the requirements of milk and milk products for home consumption as well as manuring the agricultural field. Milk was not a commodity for sale. It was believed that milk is a holy commodity and hence, buying and selling of milk is sinful act. But along with the modernization of the society traditional believes and values of the people began to erode gradually and milk also started to become a commercial commodity. Now, the income from the sales of milk is only a regular source of income of the majority of rural farmers.

In current GDP, 28% is supported by livestock sector, among which 8% is contributed by Dairy sector only. In Nepal Dairying is mostly understood as the production of pasteurized pocket milk, yoghurt, few varieties of cheese, Ice-cream, skim/whole milk powder. Though milk and milk product are the very vital food, our dairy industry still has huge demand of dairy food throughout Nepal especially in city areas. In one side people don't have availability of dairy product and other side, the milk producing farmers are suffering from milk holiday in surplus season of production.

As Nepal, a heterogeneous country in terms of geography, ethnicity, language and culture of the 23.15 million people comprising 102 different ethnic and caste groups (CBS, 2009). 31% People are living below poverty line, the poorest 20% accounts for a mere 6% of total consumption while the richest 20% accounts for 53% of total consumption (Nepal living standard survey 2003/04). The Gender development index ranks 143rd out of 175 (Human development report 2003) and adult literacy rate is about 41.8% of the population above 15 years of age. The labor force of 11.2 million is increasing at a rate of 2.4 percent: approximately 80% is engaged in agriculture, 3% in manufacturing industries and 17% in service industries (Nepal economic review 2003). The female labor force covers 47% of the total labor force, but female workers account for only 4% of the formal sector.

Production and consumption

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Rural farmers produce 100,500,000 liters milk and send to formal sector for further processing in a year. As return Rs. 6 Billion per annum go to village by means of milk product. In the latest study, milk is the major agro - product supporting to reach the urban money to rural areas. In a day average there is 4,265,000 liter milk productions throughout Nepal. Daily consumption pattern is displayed in Figure-1. Milk purchasing capacity of urban inhabitant is high. Commercialization in dairying is increased day by day, especially of the youths who returned from foreign employment. The educated youths are being also attracted in this occupation rapidly. Interestingly a youth in Dang District has started 1000 buffalo keeping. In Nepal, daily consumption of milk is 4,265,000 liters. Among which the milk is consumed in Hotel/ restaurant, dairy industry and home consumption 35 %, 15 % and 50 % respectively (Figure-1). This show the industry still needs much raw milk to fulfill its capacity for processing

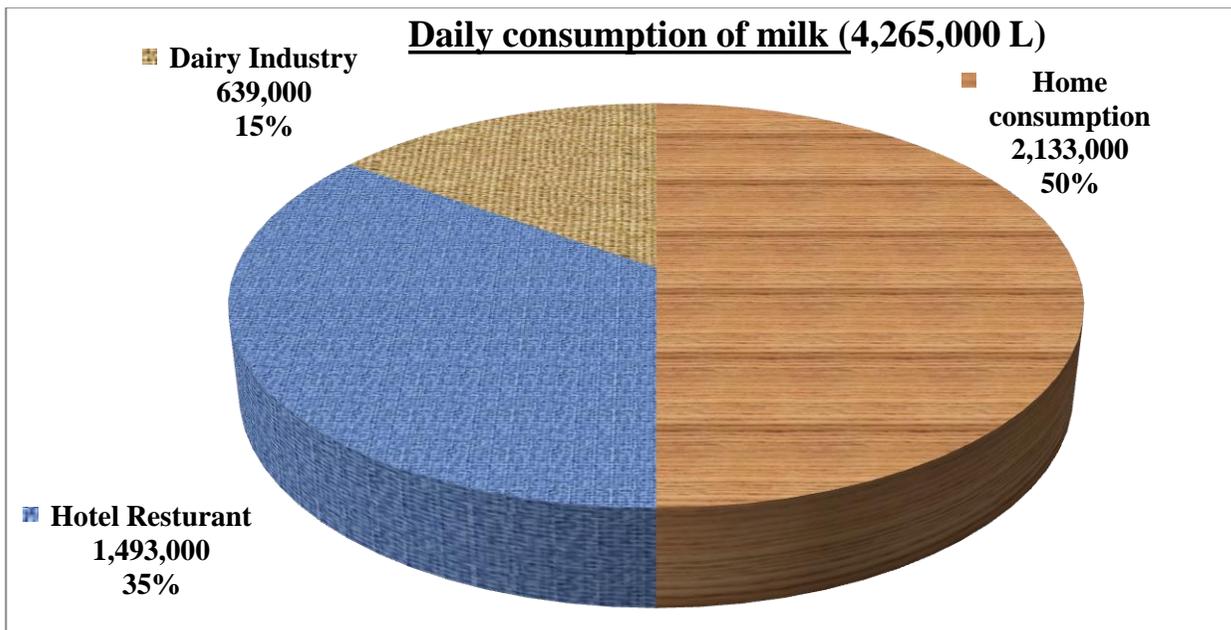


Figure 1: Daily Consumption of milk in Nepal

Consumer's perception on dairy products

With Nepal's new recognition in the global trade as a member in the World Trade Organization, lots of challenges and door to prospects have opened up. Nepalese market today seems flooded with imported products and Nepal too has an opportunity to export its products by overcoming the technical barriers to trade especially quality in terms of stringent customer requirements and product hygiene. Dairying activities has seen to be sustainable business in terms of raw materials availability, simplicity of process operation and its general acceptance by vegetarians & non vegetarians, infant, children, and elderly population. Dairy Development Corporation since its inception in 2026 BS has been a market leader in dairy products. Majority of urban Nepalese start their day with a tea made from pasteurized standard milk. Similarly Ghee, Butter, Paneer, variety of cheeses , varieties of Ice-cream , flavored milk, sweets including *Lalmohan*, *Rasbary*, *Peda*, *Gudpak* has been widely accepted and most demanding in home consumption as well as special feast & festivals.

The common consumer in urban has a hectic lifestyle, increased paying power and are conscious in healthy & safer food. Hence their choice ultimately falls on products that suit their pocket and requirements in terms of volume, taste, portability, attractive packaging, and adequate label having information with product coding etc. Dahi, yoghurt, ghee, butter, cream, cheese, ice-cream, milk powder, condensed milk, *paneer*, *lassi*, *sikarni* are the main products of milk. In Nepal, milk, *ghee*, *dahi*, *mohi*, *chhurpi* are popular in rural areas. However cheese, processed cheese, paneer, ice-cream and butter are mostly consumed in urban areas where standard hotel and restaurants are located. The main objective of the dairy industry should have to provide guaranteed the market and fair price to the rural milk producers and to supply hygienic pasteurized milk and milk products to the consumers.

Infrastructure in dairy sector

In Nepal, Dairy Development Corporation is a Government run organization in dairy sector established in 2026 BS. The main objective of the Corporation is to provide guaranteed the market and fair price to the rural milk producers and to supply hygienic pasteurized milk and milk products to the urban consumers. Similarly in private sector several dairies also are established which are trying to be organized in milk collection, chilling, transportation, processing and product manufacturing on their own efforts (Table-1).

Table 1: Current dairying status in Nepal

SN	Details	Dairy type	
		Government	Private
1	Yak Cheese Factory	6	-
2	Cow milk cheese Factory	5	-
3	Goat cheese factory	-	1
4	Plant with > 5000 L. capacity/day	3	10
5	Small & Cottage dairy	-	> 300 Registered
6	Dairy Cooperatives societies	1150	598
7	Share of milk collection	50 %	50 %
8	Share of milk sale	40 %	60 %
9	SMP plant in operation	1	2
10	Chilling centers	53	50

Source: DDC Annual progress report (2010)

Plant capacity and demand

Daily lacking of milk for the existing plant current market is 6, 38,000 liter (Directorate of Animal Market report, 2012). Nepalese Dairy industry has capacity of consumption of 12, 78,000 liter milk per day. At present, 6, 39, 000 liter milk is supplied in market daily and still 6, 38,000 liter milk daily is lacking to fulfill the capacity of existing dairy plants (Figure- 2).

Lacking the raw milk in existing plants (in liters)

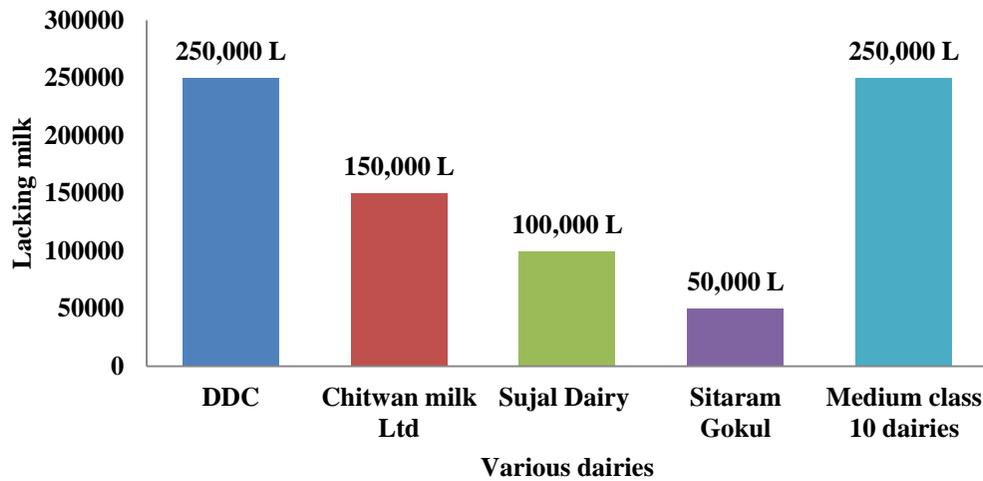


Figure 2: Insufficiency of raw milk (liters) in existing dairy plants

Dairy Education & Training

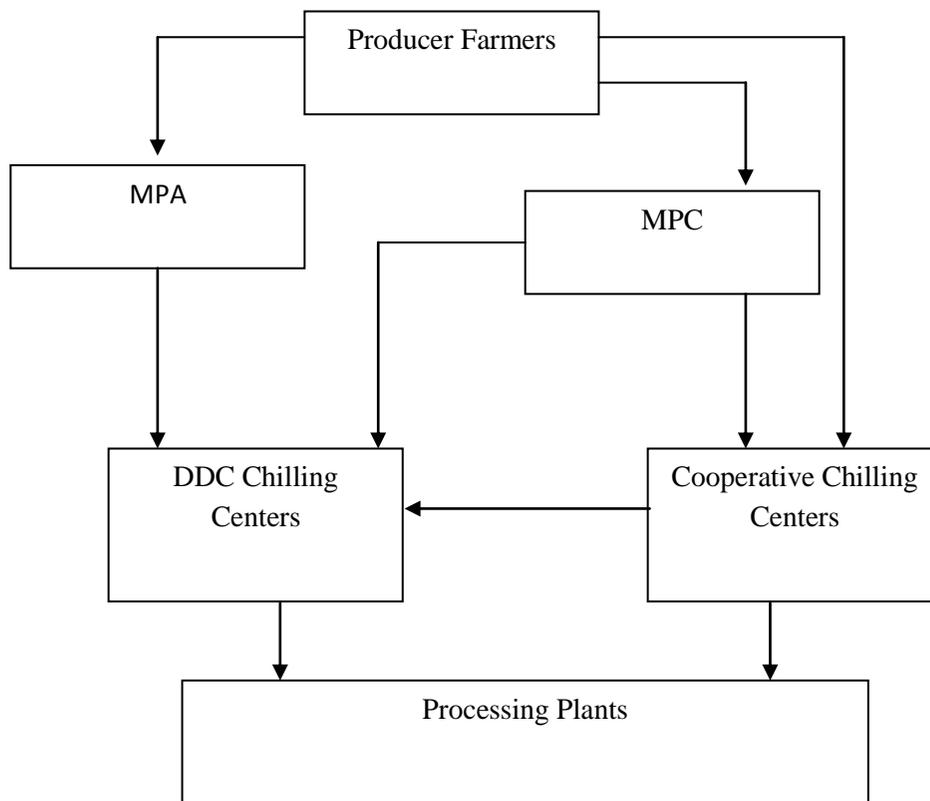
Milk has been the subject of scientific study for about 150 years. In context of our country still we have not separate courses on Dairy Science and Technology clearly. The existing major institutions involved in dairy education sector are IAAS Rampur, HICAST Bhaktapur, CCT Dharan, some CTEVT run institutes, NDDB Hariharbhawan, DDC Lainchaur, and some private dairies in few cases. Due to expectation of white color job and availability of lucrative jobs outside the country, local youths are leaving their traditional occupation. Livestock farming is becoming less lucrative job in the rural areas. But since few years, youths returned from abroad are attracted in livestock farming and dairy enterprises increasing. Still there is acute shortage of middle and high level trained man power in dairying.

Table 2: Dairy Education/Training providers in Nepal

SN	Name of Institutes	Type of program				
		Short course	TSLC (50 marks)	Diploma	Bachelor	Master
1	NDDB/DDC/few pvt dairy	Hyg. milk prodn. Product making				
2	CTEVT run Institutes	Dairy product/sweet makers- Occasionally	Constituted- 7 Affiliated- 32 Annex- 21	Food/dairy- 2 ISc.Ag- 3		
3	IAAS, Rampur				BScAg BVSc & AH	MVSc MSc Animal Sc
4	CCT Dharan				BTech Food /dairy Tech	MTech Food
5	HICAST, Bhaktapur				BScAg BVSc & AH	MSc- Dairy Technology

Milk chain

The collection of milk is done mainly through cooperatives and association of milk producers. There are approximately 1748 dairy cooperatives working in different parts of Nepal which expect to transport the collected milk to the chilling centers as soon as possible.



Quality status

Figure 3: Milk collection channels

Raw milk quality available in Nepal is poor and found to be adulterated with unnecessary materials. Generally production of milk in Nepal is mixed milk i.e. from cow and buffalo milk. About 70 % of the total production is covered by buffalo milk and 30 % is covered by cow milk. Present status of the raw milk produced by the farmers is in poor condition in deed because it has more than 50, 00,000 TPC/ml, MBRT is < 45 minute and lots of adulteration is found.

Major constraints of milk quality

- ❖ The present payment system only encourages milk producers to produce milk with high fat and SNF % and not milk of hygienic in bacteriological qualities, no incentive is given to high quality milk once it has passed the plate form test. To some extent our food law also encouraged farmer to add water because only 8 % SNF is required.
- ❖ SNF content can be increased by addition of salt, sugar, starch etc which resulting poor nutritional value and low keeping quality.

- ❖ Neutralization of raw milk by alkaline products which is unsuitable for manufacturing dairy products
- ❖ If the milk producer having his milk is rejected at MPCs or chilling centers, that farmers try to sell their rejected milk to other MPC/dairy plant on a reduced price
- ❖ Milking hygiene at farm level is very poor , resulting in raw milk the extreme high number of bacteria per ml
- ❖ Cleaning & hygienic condition of MPCs, chilling centers and dairy plants are very poor resulting further and even post contamination of pasteurized milk and products
- ❖ Due to inadequate road facilities and chilling centers milk transportation become time consuming from farm to chilling center which causes the chances of spoilage
- ❖ Due to decreasing in grazing land increasing cost of milk production
- ❖ Increasing in load shedding increases the cost of fuel in chilling and processing.
- ❖ No quality based payment system and no premium and deduction in practice
- ❖ Feeling of faith among dairy cooperatives
- ❖ Unhealthy competition between the milk buyers like the rejected milk from one buyer may purchase by another in low price to make more money

Conclusion

Technical Education and vocational training (TEVT) in dairying sector needs to enhance massively to transfer urban cash to the rural community. Dairy Education inspires the rural youth to adopt this dairying occupation commercially in their home land with utilizing the parental knowledge with adding advanced new technologies. Many unemployed can be changed into dairy entrepreneur in their home land and also can provide job offer to the unskilled and semi skill labor in the vicinity of their dairy farm easily. It enhances the domestic job market. When rural development is over looked, definitely there is high chance of national development. Participatory and cooperative dairy enterprises will be the key concept to uplift the living standard of community people. Self employment increases in villages which is the key element in economic development of the country. Due to expansion of micro hydropower and agricultural road in the villages the milk chilling centers are increasing which is inspiring the farmers in milk production in large scale. Fruit & vegetable are the seasonal products but the commercial dairy farmers can produce the milk & dairy products throughout the year. Government also has the supporting scheme to the individual or the cooperatives for example chilling vats, cooler tank and other dairy equipments for initiative people. As job opportunities are declining in formal sector, enhancement of small scale dairy enterprises could be a good intervention to over the unemployment problems in the villages. For this matter those youths should be provided sufficient technical skills & knowledge including the entrepreneurial skill. Technical & vocational education imparts these abilities to the individuals. So, TEVT in dairying must be expanded massively that could be a best possible way to mobilize urban money to the rural community.

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Importance of Ethics in Research: A Short Look

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Many researchers under the campuses, research institutes, I/NGOs and hospitals in the country ask question about the research ethics as 'is it really needed in any research?' 'Is the Ethical considerations of their research and publications provides gravity of any research and publication?' Why Institutional Review Board/committees is/are formed and what roles this provides? and so on. To answer these questions, this article provides short information about the importance of Research Ethics.

Ethical consideration means recognizing the Human Rights in research sector where Human are the subject for study.

Nepal Health Research Council, a governing National autonomous body on health related researches has contributed significantly promoting ERB and IRC/IRBs in the country. NHRC has a very comprehensive and concise publication on "National Ethical Guidelines For Health Research in Nepal and Standard Operating Procedures" (Published in January 2011). It is like a Manual for all researchers and organizations.

This brief ethical guidelines only provides basic general information to highlight the important points which might help researchers to understand in brief about Ethics. These points have been cited (without permission of concern persons) like the tips of Forum for Ethical Review Committees in Asia and the Western Pacific (FERCAP) Workshop in July 2011, Bangkok, Thailand and points presented by different organizations at the Consultative Meeting on Research Review Process organized by NHRC and Mary knoll Fathers and Brothers Project (9-10 September 2011) and from other references.

Thus, I am happy to provide a basic information regarding Ethics.

History

The Nuremberg Code

Principles resulting from the Nuremberg Trials

- 23 leading German physicians and administrators tried for conspiracy, war crimes, crimes against humanity, membership in criminal organization
- 16 sentenced to either death by hanging or imprisonment;
- 7 were acquitted

The Nuremberg Code explains major 10 points for ethics

1. Voluntary consent of the human subject
2. Experiment results should be for the good of society
3. Experiment on humans should be based on animal experimentation
4. Experiment should avoid unnecessary physical and mental suffering/injury
5. Experiment should not be done if it will cause death/disability
6. Risk must not exceed humanitarian importance of research
7. Proper preparations & adequate facilities

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8. Experiment done only by qualified persons.
9. Subjects should be free to end participation
10. Scientist must be prepared to terminate the experiment at any stage, if needed

Nuremberg Code: Impact

1. UNHCR: general human right not to be a subject of experimentation “against one's will”(1948) or “without one's free consent” (1952 and 1958)
2. Declaration of Geneva: condemned the Nazi experiments
3. Geneva Conventions I,II,III,IV: protections against unwanted biological or medical experimentation

Declaration of Helsinki

- Morally binding obligation for physicians – overrides national laws/legislations, thus a higher standard
- Original rationale - no international statement on human experimentation;
- limited laws
- Expanded the 10 Nuremberg Principles

Basic text for international guidelines such as CIOMS, WHO Guidelines for (Good Clinical Practice) GCP for trials, ICH Tripartite Guideline for GCP

- Council of Europe
- Adopted by several National guidelines worldwide
- Amended 1975, 1983, 1989, 1996, 2000, 2008

Provisions

1. Scope (Art 1): statement of principles for medical research involving: Human subjects, identifiable human, material, Identifiable human data
2. Overall duty of the physician (Art 2,3,4,10,11)
3. Purpose of research and the protection of human subjects (Art 5,6,7)
4. Risks and burden (Art 8) and ethical responsibility (Art 9)
5. Risks & benefits assessment (Art 18, 20, 21)
6. Scientific standards and design (Art 12, 14, 16)
7. Welfare of animals (Art 12) and protection of the environment (Art 13)
8. Oversight by a research ethics committee (Art 15,19)
9. Research on vulnerable subjects (Art 9,17)
10. Respect for persons:
 - Autonomy and elements of consent
 - Voluntariness (Art 22)
 - Privacy and confidentiality (Art 23)
 - Disclosure of information and documentation of consent (Art 24)
 - Duress (Art 26)
 - Incompetence to consent (Art 27, 28, 29)
 - Use of identifiable human material /data (Art 25)

1. Publications (Art 30)
2. Additional Principles
 - Research with medical care (Art 31)
 - Use of placebo (Art 32)
 - End of study entitlements (Art 30)
 - Treatment vs Research (Art 34)
 - Other requirements if no proven interventions exist (Art 35)

Council for International Organizations of Medical Sciences (CIOMS)

1. CIOMS is an NGO established by WHO and UNESCO in 1949
2. Promotion of international research activities in the biomedical sciences
3. Programmes: *Bioethics, Health Policy, Drug Development, and International Nomenclature of Diseases*

CIOMS Guidelines

1. Formally known as the International Ethical Guidelines for Biomedical Research Involving Human Subjects
2. Created 1993 by the Council for International Organizations of Medical Sciences (CIOMS); updated in 2002
3. 21 guidelines (15 in the original report) address different ethical issues

CIOMS: Guidelines for Epidemiological Research

1. International Guidelines for Epidemiological Studies
2. Created 1991; published updated version in 2009
3. 24 guidelines (originally 53 provisions, thematically grouped)

CIOMS Guidelines explains for

1. Scientific validity
2. Ethical review committee (local review)
3. Individual informed consent
4. Undue inducement
5. Benefits/risks to participation
6. Populations/communities with limited resources
7. Equitable distribution of burdens and benefits
8. Vulnerable persons
 - Children
 - Mental/behavioral incapacitated to consent
 - Women
 - Pregnant women
9. Confidentiality
10. Right of injured to treatment & compensation

11. Strengthening capacity for review
12. Obligations of sponsors

CIOMS Guidelines: Impact

"To indicate how the ethical principles that should guide the conduct of biomedical research involving human subjects, as set forth in the Declaration of Helsinki, could be effectively applied, particularly in developing countries, given their socioeconomic circumstances, laws and regulations, and executive and administrative arrangements".

Some Challenges

Guidelines are based on Western values/principles and are sometimes problematic when applied to non-Western countries. Example:

Individual informed consent & autonomy

1. In some communities, women must ask for permission from their husbands
2. In some communities, community permission is required
3. The universal nature of guidelines is challenged by specific requirements in local context and in specific researches
4. However, standards in the form of guidelines contribute to having an ethical framework in the conduct of research (especially across countries)

The Role of Ethics Committees in Health Research

Health Research as a Social Activity

1. Research involves human beings
 - Sponsors/researchers vis-à-vis research subjects
 - Industry vis-à-vis regulatory officials
 - Research stakeholders vis-à-vis general public
2. Ethics – principles of conduct governing human relationships
3. Need for guidelines/regulations for mutual benefit
4. Need for multi-stakeholder perspective
5. Principle of check and balance

Ethical Concerns

'The booming clinical trial industry is raising concerns because of:

- A lack of regulation of private trials
- And the uneven application of requirements for informed consent
- And proper ethics review.'
- Specific concern about lack of independence of ethics committees

Therapy vs. Research

- Therapy – objective of clinical practice
 - Best therapy for patient

- Individualized
- Objective – use of most effective intervention
- Research – generalizable knowledge
 - Standardized intervention
 - Randomized design
 - Experimentation

Ethical Guidance for IRBs/IECs

- International Guidelines
 - Helsinki, Belmont, CIOMS, etc.
- National Laws and Guidelines
- Standard Operating Procedures
 - WHO Operational Guidelines for Ethics Committees That Review Biomedical Research
 - ICH-GCP
- Requirements for international assurances
 - Federal wide Assurance (FWA), etc.

Declaration of Helsinki 2008 defines role of REC/IRB

1. The research protocol must be submitted for consideration, comment, guidance and approval to a research ethics committee before the study begins.
2. This committee must be independent of the researcher, the sponsor and any other undue influence.
3. It must take into consideration the laws and regulations of the country or countries in which the research is to be performed as well as applicable international norms and standards but these must not be allowed to reduce or eliminate any of the protections for research subjects set forth in this Declaration
4. The committee must have the right to monitor ongoing studies.
5. The researcher must provide monitoring information to the committee, especially information about any serious adverse events.
6. No change to the protocol may be made without consideration and approval by the committee.

Good Clinical Practice (GCP)

An international ethical and scientific quality standard for designing, conducting, recording, and reporting trials those involve the participation of human subjects and for public assurance that the rights, safety, and well-being of trial subjects are protected.

WHO Operational Guidelines For Ethics Committees That Review Biomedical Research 2000

To contribute to the development of quality and consistency in the ethical review of biomedical Research Defines:

1. Membership requirements,
2. Training of members
3. Operating ERC guidelines
4. Meeting requirements

5. Knowledge of ethical issues
6. Independence from influences

Composition of Ethics Committees

1. At least 5 members
2. At least 1 member from non-scientific area
3. At least 1 member independent of the institution/trial site
4. Diversity of background for complete and adequate review
5. Representation of men and women.
6. Representatives from the old and young

Selection of IRB/IEC Members

1. Members selected based on their interest,
2. Ethical and/or scientific knowledge and expertise, as well as on their commitment
3. Disclosure of conflict of interest in a proposal under consideration.
4. Signing a confidentiality agreement at the start of their term
5. Appointment for a period of 3 years and renewable for up to two consecutive terms.
6. Rotation enforced to ensure continuity

Independent Consultants

1. Provide assessment or advice on specific protocols
2. Appointed by the Chairperson of the IEC/IRB.
3. Relevant professional qualifications required
4. Willing to disclose and publicize full name, profession, and affiliation, financial accountability
5. Willing to sign Confidentiality / Conflict of Interest Agreements regarding meeting deliberations, applications, information on research participants, and related matters.

Training of Members

IEC/IRB members should maintain Competence updating of their knowledge of:

1. Good Clinical Practice (GCP)
2. Declaration of Helsinki
3. Ethical Issues
4. Relevant laws
5. Developments in relevant science, technical and environmental, health and safety aspects
6. Relevant requirements of health, safety and environmental laws and regulations and related documents
7. Audit procedures
8. IRB/IEC Responsibilities

IRB/IEC Responsibilities

1. Safeguard the rights, safety, and well-being of all trial subjects
2. Review research documents

3. Examine qualifications of investigators and staff
4. Review the PROTOCOL (technical review)
5. Evaluate study sites
6. Review study participation
7. Analyze risks (physical, psychological, social), Assess benefits, Involvement of vulnerable participants
8. Review Decisions (Approval/favorable, Modification required, Disapproval/negative opinion, Termination/suspension of prior approval)
9. Notify the investigator to report
10. Help monitor implementation
11. Retain all relevant records for at least 3 years after completion of the trial and Make them available upon request from the regulatory authorities
12. Protect rights, safety and well-being of the subjects
13. Transparency and objectivity, Accountability and responsibility,

Ethics Committees need

Ethics Committees need to ensure the ability to arrive at decisions that reflect the a full appreciation of the scientific and ethical concerns of the protocol through the use of High standards of ethical review that result from combined knowledge, practice and experience.

IRB at CTEVT should be formed for:

1. Adapting International Ethical Laws, Regulations, Chapters, Declarations & Guidelines along with Nepalese laws and regulations
2. Coordinating with different IRBs in the countries including NHRC and abroad
3. Analyzing in-house proposals and out of house Proposals
4. Review the article document to provide ethical clearance
5. Ensuring jurisdictions of IRB and acting based on the need
6. Other as per the need and decision of the board meetings

Problems encountered

1. Lack of training of the board members on IRB issues
2. Lack of knowledge on Ethical issues of the board members
3. Absenteeism in the monthly meeting of the board members
4. Lack of experts/reviewers
5. Lack of trained administrative staffs and poor filing and recording system
6. Breaking confidentiality
7. External influences
8. Lack of incentives to the Board members
9. Lack of infrastructures
10. Lacking office equipments
11. Slow administrative process and long process in the administration
12. General lacking

Thus, IRB is responsible to guide, safety management, support, and creating positive environment as a facilitator rather than control to the researchers within the jurisdiction.

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Role of TEVT in Reviving Traditional Arts, Crafts and Sculptures

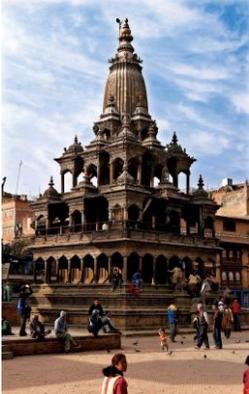
Dr. Poorna Kanta Adhikary

Synopsis: This author is illiterate in arts, crafts and sculptures. But as an educator, he has concerns on their state of art and argues that TEVT should play a significant role in reviving them, which otherwise are in danger of extinction.

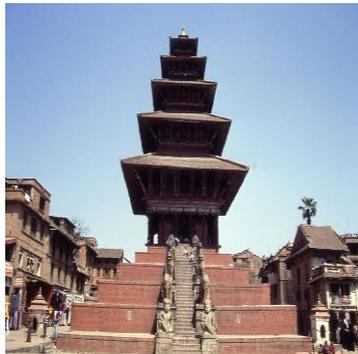
1. Nepal's Treasure of Arts, Crafts and Sculptures

Nepal's treasure of arts, crafts and sculptures is the symbol of its culture and ancient civilization, which provides attraction to tourism and education alike at all levels. The following provides the glimpse of such a treasure, which has baffled architects as well as commoners around the world appreciating the level of architectural knowledge and skills of ancient Nepal. Such monuments are not only in Kathmandu Valley but also in some areas of hills, mountains and terai and are classified as world heritage sites.

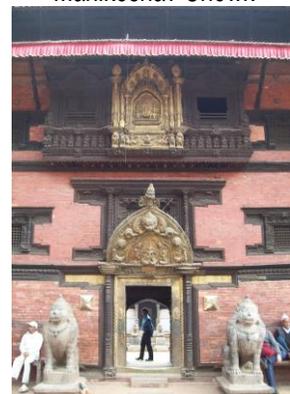
Stone Work Masterpiece: Krishna Mandir



Nyatapola Temple: Wonder of Nepal



Manikeshav Chowk



Paubha: Viswarupa Shiva



Wood Carving: Torana



2. Informal and Formal Education

The tradition of family apprenticeship with informal education has been keeping it going for several centuries passing the knowledge and skills from one generation to another. High level of formal education has also entered into it when scholars from home and abroad have been doing research on them as well as making new creation around them often for their thesis/dissertation work needed for university degrees and professional artistic works.

Family Apprenticeship: Raj Kumar
& His Father Rudra Shakyia



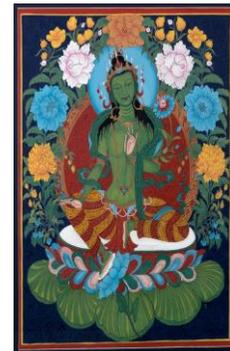
Maureen Drdak, a Snior Fulbright
Scholar at Shakya Atelier



Maureen Drdak, with Her Flying
Nagas: High Level Scholarship of
International Importance



Paubha Art of Renuka Gurung, Ph.D.
Student at London



3. Challenges

There is a trend among Nepalese youth like anybody else around the world, going to modern western education, preferring to go for national and international professional white collar jobs and corporate business. This has also been true to the children of traditional Nepalese artisans, craftsmen and sculpturists alike who are taking up new businesses and immigrate abroad as well. As the traditional family business is no longer attracting the new generations, the old family apprenticeship system is also dying. There is now a great risk of losing the age old valuable knowledge and skills existing only in some limited personalities. There is an acute shortage of skilled workers and very slow process of transfer of knowledge. The situation would be further exacerbated when the old generation becomes hesitant to pass their knowledge and skills to persons of other families, castes and ethnicities. Foreign encroachment is already threatening with mass factory produced items flooding into the Nepalese and international markets.

4. Opportunities: National and International Markets

Nepalese traditional arts, crafts and sculptures have not only the aesthetic values but also very spiritual ones linking with Hinduism, Buddhism and Tantrism and represent Nepal's heritage of cultural pluralism and coexistence. Thus they carry both national and international importance as more and more people around the world tend to be attracted toward them. For this reason, they have a very high demand in both national and international markets; often supply of quality products cannot meet the market demands. Big orders for establishment of monasteries and temples are also coming from abroad. Due to insufficient availability of capable craftsmen, Nepalese entrepreneurs have difficulty to respond to them. However, interest of youth of other castes and ethnic groups is immerging to enter into the trade. There is also national and international good will for conservation and development of Nepal's traditional arts, crafts and sculptures and support could be flowing if some self-help approach is taken up by Nepalese educators and entrepreneurs. The following are some of the examples of recent products having national and international markets.

Bhadrayogini for a Nepali Private House



Dharma Shakya's Stone Peacock Window



Mustang Buddha



Raj Kumar Shakya at Bhutan Druk Odiyana Project



Raj Kumar Shakya at Bhutan Druk Odiyana Project



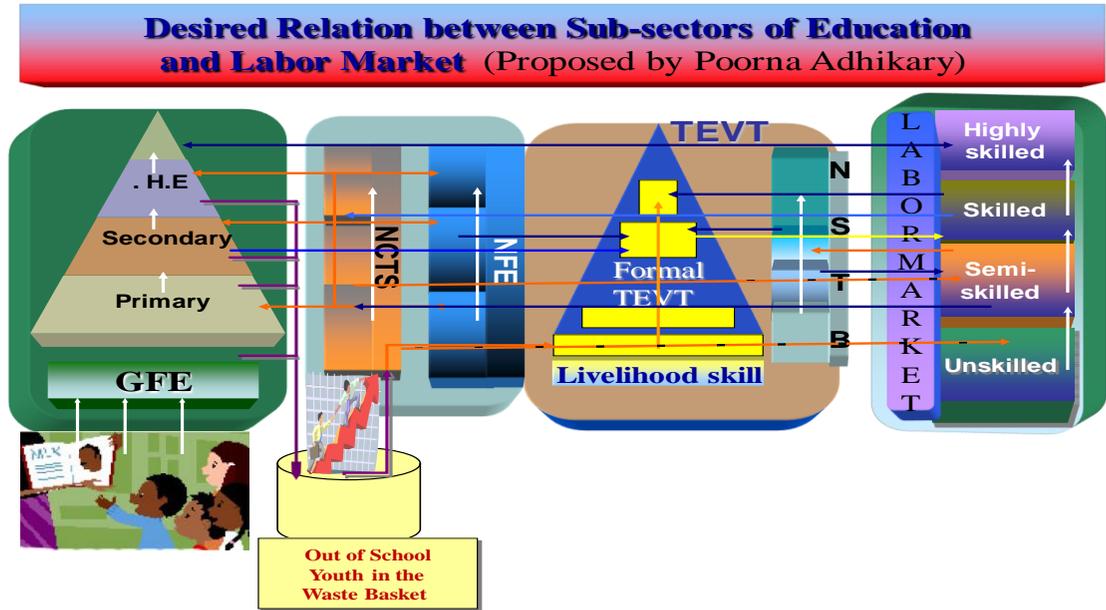
Rabindra Shakya, Maureen's Teacher at Work on Vajrayogini Head



5. Role of Technical and Vocational Education (TEVT)

If a system of training could be established linking with entrepreneurship, and national and international market, they could become a very good source for youth employment/self-employment, economic regeneration and international trade. Flexible market oriented TEVT system could be designed with some possible national & international support. An interview with Rabindra Shakya indicates that it is the out-of-school youth, a mixed group of different castes and ethnicities, who could not complete SLC and are unemployed, are the ones who are coming to take the training at his Atelier. This is true with Acceswor Mahavihar Training Institute (AMTI) as well which provides six months long course in some of these fields. There is already discussion going on between Enterprise Development Company (EDC) and AMTI trainers and other trainers/entrepreneurs to work together to offer some courses at National Skill Testing Board (NSTB) Level 1 which can guarantee employment/self-employment for the graduates. The curriculum is almost complete which needs to go through NSTB/CTEVT DACUM process. EDC has also approached Employment Fund Secretariat (EFS) for possibilities of collaboration. Possibilities could also be explored to support such an effort through Skill for Employment Project (SEP) and World Bank supported EVENT Project. UNESCO could also have an interest on it. Lamjung Skill Development Foundation (LSDF), only institute in the country to provide two years course in market oriented NSTB Level 2 courses, could offer the same in Nepal's traditional arts, crafts and sculptures as well to provide opportunities for training to interested eligible youth. Some Level 1 graduates could also qualify to enter into the Level 2 course. In this venture, one can also look for possibility for investment by NSTB, which is moving ahead for autonomy by the sales of its

services. Further courses at Level 3, 4 and beyond could also be provided in due course of time giving the possibility of the rise of a new academy for traditional arts, crafts and sculptures. A collaborative effort is needed among the related stakeholders: trainers, entrepreneurs, and government and international institutions for making such a possibility to a reality. NSTB tests of different levels have been already made in some trades for individuals to appear on them.



Training in Achheswor Mahavihar Training Institute



An institutional approach is needed for a collaborative action to apply the above concept of the desired relation between sub-sectors of education and labor market. The out-of-school youth in the waste basket interested and found eligible through Cognition Testing System (CTS) and aptitude test could be provided certain level of skill training which has direct linkage with the labor market. Those who cannot qualify for the needed cognition could be provided bridge courses through non-formal education means to qualify for them. To initiate such a process there is a need for related entrepreneurs to guarantee employment for the skilled graduates. The TEVT course should then be designed as per need of the market and see that the graduates also pass through the respective NSTB tests. Once they are in employment or self employment, then the skilled workers could prepare themselves to qualify for the needed cognition if they desire to take the higher level course. Thus both horizontal and vertical promotion opportunity could be made possible for the workers

to rise in the vertical ladder. Only those who pass through the NSTB Level 4 and beyond could then be qualified as the real artists. If such a scheme could be worked out then it would be possible to produce artisans at different levels, which will then help revive the Nepalese traditional arts, crafts and sculptures to meet their growing demands at the national and international markets. Such a scheme could generate employment/self-employment opportunities to Nepalese out-of-school youth as well and help generate economy based upon Nepal's precious heritage. (Kathmandu, 31 March 2012)

Vocational education, Social participation and Livelihoods in the post conflict situation of Nepal

Jeeb Narayan Kafle¹

Abstract

Technical education and vocational training is one of the key factors to develop a country. The Council for Technical Education and Vocational Training Act clearly spells out the provision and management of technical education and vocational training in Nepal for its expansion and promotion. This paper attempted some glimpses on this matter and gives a brief history of vocational education.

Every people should feel ownership of development programs of a country and it is not succeed without active participation of the people because development is for the people and performed by the people. The paper quickly envisions the different actors of the society, elements of conflict, and possible factors of resolution as well. The article also attempts the need of civil society participation toward people's agenda and relationship between people and the state for their sustainable livelihood in post conflicts situation linking with the technical education and vocational training.

Background

Vocational education prepares people for careers that are based in manual or practical activities. It is traditionally non-academic and directly related to a trade, occupation, or vocation in which the learner participates. Sometimes it is also referred to as technical education, since the student directly develops expertise in a particular technology or group of techniques. Vocational education and career education are also terms used interchangeably. Vocational education *and training* is an education that prepares trainees for jobs at various levels from a craft or trade to a professional position in engineering, accounting, nursing, medicine and other health sectors, architecture, pharmacy, law etc. Technical and vocational education and training widens the skills and knowledge that is essential to our daily life. The newer term technical and vocational skills development is often used to describe flexible skills, learning to learn, going beyond literacy and numeracy skills and including more than life skills(King & Palmer 2006, McGrath, 2005). Callods (1994) views that vocational education and training are indispensable instruments for improving labor mobility, adaptability and productivity thus contributing to enhancing firms competitiveness and readdressing labor market imbalances(p.241). Moreover, when people acquire skills, they typically make those around them more productive. Booth and Snower (1996) and Ashton and Green (1996) highlight the more training a worker has on or off the job, the more a worker can learn from others about doing a job effectively, and the more productivity can workers interact in production, innovation, distribution, and sales (P.1 & P.17).

Vocational education may be classified as teaching procedural knowledge. This can be contrasted with declarative knowledge as used in education in a usually broader scientific field, which might concentrate on theory and abstract conceptual knowledge. Vocational education can be at the secondary, post secondary level, further education level and can interact with the apprenticeship system. Increasingly, vocational education can be recognized in terms of recognition of prior learning and partial academic credit towards tertiary education (e.g., at a university) as credit; however, it is rarely considered in its own form to fall under the traditional definition of higher education.

For the purpose of this article, vocational education is defined as a practically illustrated and attempted job or career skill instruction. As such, a variety of components fall under the vocational education umbrella: agricultural education, business education, family and consumer sciences, health occupational education, marketing education, technical education, technology education, and trade and industrial education.

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Vocational preparation must always be viewed against the backdrop of the needs of society and of the individual. While meeting the demands of the economy, the abilities of individuals must be utilized to the fullest. Meeting the internalized job needs of individuals is a crucial objective of vocational education.

If we see the history of vocational education of US, in the early twentieth century, vocational education was a prominent topic of discussion among educators as schools struggled to meet the labor force needs consistent with the shift from an agrarian to an industrial economic base. In his 1907 address to Congress, President Theodore Roosevelt urged major school reform that would provide industrial education in urban centers and agriculture education in rural areas that was most fruitful approach to develop the country.

Until the end of the 20th century, vocational education focused on specific trades such as automobile mechanics, plumbing, welding, or carpentry. However, as the 21st-century labor market becomes more specialized and economies demand higher levels of skill, governments and businesses are investing in the future of vocational education through publicly funded training organizations and subsidized apprenticeship or training programs.

Vocational education has diversified and now exists in industries such as retail, tourism, information technology and cosmetics, as well as in the traditional crafts and arts. Nepal has a long history in crafts and arts although there were no national guidelines, policies, commitment and practices before the democracy (1951). But few technical education programs like Aurvadic, Medicine and veterinary training existed (as sited in Tandan, 2010, p.24). Different practices were made after the restoration of democracy and shaped an apex body as the Council for Technical Education & Vocational Training (CTEVT) with a vision of no Nepali should be unemployed due to lack of technical and vocational education & training through an Act of 1990.

Participation as new Orthodox:

Promoting participation in managing social services is very important for the development of a country like Nepal. Participation promotes international humanitarian assistance for countries or regions at war or in conflict, thus establishing itself in the new relief paradigms. So that community participation in educational governance also has a part of formula to achieve both traditional development goals and social reconciliation after a conflict. Furthermore, supporting community associations to deliver social services when a state remains weak can significantly revise the relationship of the state to its citizens.

Participation holds strong appeal for multiple actors including the voices and concerns of beneficiaries. So community participation holds weight when it is invoked to support social reconstruction because civil society and democracy building activities are considered vital interventions with which to stabilize post conflict societies. Political participation is also a major part for reducing conflict among the citizens, ethnic groups, political parties, and community people and within different actors residing in the society. Scholzman, Verba, and Brady (1999) describe political participation as providing “the mechanism by which citizens can communicate information about their interest, references and needs and generate pressure to respond” (p.430)

Societal participation for behavioral change

Civil society participation can strengthen political will around people’s agendas and strengthen people’s control over with different factors that are concerned with their agenda to achieve their social goal. Social participation involving vulnerable and excluded groups should seek the empowerment of those groups, increasing their effective control over decisions that influence their access and use of different services. This is the participation in the sense of engaging with others in the domains of life appropriate to one’s stage of life can benefit individuals while also helping to make communities safer and stronger. Social participation may be limited by negative behavior in the community, such as criminal behavior, and by people’s perceptions regarding the extent of such behaviors and how vulnerable they are to them. Feelings of safety when at

home alone are one indication of the level of trust in one's neighborhood and community, although many circumstances may influence these feelings.

Relationships between people are held together by interaction. As well as support from family and close friends, people are thought to benefit from being part of wider communities of people with shared interests or circumstances, and also from being able to form looser ad-hoc social connections with other people, outside of these networks. Interacting with people at work or through study and training is an important part of young people's social interaction that ultimately promotes harmony, mutual trust and optimism.

Sustainable livelihoods in the post conflict situation

Over the past two decades humanitarian response to conflict and disasters has increasingly recognized the importance of early recovery, and better links between emergency relief and longer-term development activities. The number of casualties and the extent of damage caused in any conflict can be difficult to determine. It takes time to collect information and to verify it with new numbers and statistics continuing to come in. The numbers by different agencies vary depending on their definitions of victims and their methods of data collection. Nepal's decade-long conflict is the Nepali civil war (labeled people's war by the Maoists) was a conflict between government forces and Maoist fighters in Nepal which lasted from 1996 until 2006. The war was started by the Nepal (Maoist) with the aim of overthrowing the Nepalese monarchy and establishing the "Federal Republic of Nepal." It ended with a comprehensive peace accord signed between the government and the Maoist.

The conflict has left 17000 people dead, 13000 people missing in Nepal, 50000 people internally displaced, 6000 people disabled, more than 25000 children were orphaned and 9000 persons widowed. Similarly a total number of 13000 private properties were lost or damaged due to the civil war. In addition several government offices, schools, bridges and police posts were damaged and US \$ 246.6 million worth of physical infrastructures was destroyed by the war.

Koen Vlassenroot & Timothy Raeymaekers(2005) observed that after African countries signed peace agreements they face new challenges in state-building and promotion of democratic reforms that diminish the optimism of peace. They highlights the failure of peace-builders to see armed conflict as an outcome of inadequate action on complex local conflict dynamics and instead only see it as an object of intervention. Boyce (2003) argues that post armed conflict recovery and reconstruction represents a set of socio-cultural and political experiments, focusing on the creation of a national politico-legal structure, such as constitutionalism – rule of law, development projects, and economic governance. Koen Vlassenroot and Timothy Raeymaekers (2005) further suggest that one method in which to evaluate the durability of new social orders after the war is to look at how local actors (militia-members, local businessmen and grassroots populations) try to reduce and manage risks in situations of enduring conflict. 'War economy' theories argue that war produces important opportunities for those that are willing to take the risks involved. The implication in this argument is that these opportunities provoke important shifts in the social and economic organization of war-torn societies; which do not only include new processes of local 'elite' accommodation and adaptation, but could involve different patterns of socio-economic interaction between elites, non-state armed actors and grassroots populations giving rise to alternative forms of power, profit and protection.

Promoting technical education and vocational training would be one of the influential tools for reconciliation of the conflict victims that help generate income and employment for better livelihoods. Additionally, reinforcement of law and order, assurance of good governance with minimizing corruption, quick delivery of services, reconstruction of damaged physical infrastructures, creation of harmony among political/social groups, allocation of budget to minorities, ethnic groups, conflicts victims, economically deprived and discriminated people who are not benefited from the state before are the prerequisite for improving livelihoods in post conflict situation of Nepal. One of the most important things is the completion of the constitution making process institutionalizing with federal republic of Nepal.

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Factors Affecting Access of Disadvantaged Groups (DAGs) to TVET

Ram Hari Lamichhane, PhD¹

Abstract

The person without skills cannot survive easily. Technical skills contribute to get employment and generate employment in global village. Because of the employment opportunity, TVET plays vital role to reduce poverty. Considering the importance in poverty reduction, Government of Nepal launched different TVET programs and projects targeting disadvantaged groups. Many people got advantages from the TVET programs, but majority of DAGs could not get opportunity to participate in the programs. It is happened due to the different obstacles to participate in TVET. The major factors affecting access of DAGs to TVET are finance, awareness and information, availability of TVET programs, quality of training, flexibility in training time, and social factors. Therefore, there should be sustainable financing system, awareness and information on TVET, quality TVET programs, demand led TVET, availability of programs, time flexibility during implementation, and skilled workers' recognition in the society to enhance the access of DAGs to TVET.

Background

Technical and Vocational Education and Training (TVET) provides knowledge and skills to the participants and link the training to employment. Increment in employed graduates has a direct correlation with poverty reduction. The Ninth Five Year Plan (1997 – 2002) and Tenth Five Year Plan (2003 – 2007) and recent three year interim plan have duly considered TVET as one of the important measures to reduce poverty. Swiss Agency for Development and Cooperation (SDC) has prioritised occupational skills and enterprise development (OSD) sector as the key sector to reduce poverty (SDC, 1999). Highlighting the challenges of employment prospect, Rogers (2003) states that the danger for present and future is not lack of jobs, but lack of technological skills because there will be shortage of skilled workers with education and training who can handle the jobs. Education and training therefore provide employment opportunities for welfare of recipients and they can be satisfied once they enter the world of work.

Training, skills development and education are the key factors to assist individuals to increase their employability, which is crucial to improve and sustain their productivity and earning opportunity at work. The creation of "greater opportunities for women and men to secure decent employment and income" is one of the strategic objectives of the Decent Work Agenda of the ILO. IFP/SKILLS programme of the ILO is working towards achieving greater investment in training and skills to improve the economic conditions of the people (ILO, 2003). Moreover, involvement of the poor as competent partners in development can be a factor for poverty alleviation. To make this happen, national efforts should be initiated to promote human development policies compatible to the economic growth and continuous skills development of the poor (Poudyal, 1995).

TVET is a tool for social integration and for re-enforcing coherent development in societies (UNESCO, 1999). TVET is equally important for unskilled and skilled persons because unskilled persons can acquire new skills and knowledge to enhance their efficiency and skilled persons can promote their skills to cope with new technologies and changes.

Considering the importance of TVET, Government of Nepal initiated different programs and project to support unemployed youths through TVET. Despite many efforts to reduce poverty through TVET program, the real poor and disadvantaged group could not get benefit because of the barriers in their access to the program. This paper indicates the major factors affecting to access in TVET programs.

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Major factors affecting access of DAGs to TVET

There are many factors affecting access of disadvantaged group to TVET. The major factors are finance, information, aptitude, social, linkages of program with employment and availability of the programs in near geographical location. The obstacles to participate poor and DAGs in TVET were: inability to pay high training cost, training without assessing target groups and market needs, logistics difficulty to access to technical schools situated in remote distance, negative attitude towards skill based manual work, low education level of poor and DAGs, social stigma to send females to training and unable to convince their parents and unable to prove link of TVET with employment (Belbase, 1981, ILO, 1998, Panta & Adhikari, 2002, Rai, 2002, ADB, 2002 and Sharma, 2005). The above factors were similar with the factors identified through research conducted by writer in 2006.

Table 1 presents the perception of respondents on major factors affecting access of poor and DAGs to TVET. The respondents said that all the listed factors in Table 1 were affecting the access of poor and DAGs to TVET. There were Likert type 5 levels rating scales from 'strongly disagree' to 'strongly agree'. The mean of the responses was greater than three in all factors. The factors, such as high cost of training, lack of provision for post-training support, geographical difficulties (few TTPs are in rural areas), lack of clear provision of employment, lack of adequate number of private schools offering trainer and the trainee friendly vocational training programs and lack of absolute poor and DAGs' access to relevant information about TVET programs, secured mean 4.36, 4.31, 4.11, 4.06, 3.96 and 3.88 respectively. Similarly lowest mean was 3.18 for the factor, which was in public school; vocational training programs have been conducted with convenience of TTPs rather than trainees' convenience.

Table 1

Respondents' Perception on Major Factors Affecting Access of DAGs

Statements	Frequency of Respondents' Perception			
	Agree (4-5)	Neutral (3)	Disagree (1-2)	Mean n =379
Poor and DAGS cannot afford high cost of TVET.	316	35	28	4.36
There is no post-training support from TTPs for the graduates' employment.	321	30	28	4.31
Majority of the Technical Training Institutes are in urban areas, so rural people (mostly poor) do not have access to training.	294	38	47	4.11
One of the reasons for lack of attraction of poor and DAGS in TVET is inability to assure employment opportunities to the potential trainees.	284	38	57	4.06
In private school, vocational training programs have been conducted with TTPs convenience than trainees' convenience.	276	46	57	3.96
Generally, absolute poor and DAGs do not get relevant information about TVET programs.	279	43	57	3.88
There is no transparent system in TTPs to provide stipend to the poor and DAGS.	267	43	69	3.87
Vocational training programs are quantity based rather than quality and need based.	267	51	61	3.87
Longer duration of the training does not allow poor and DAGs to participate.	262	54	63	3.84

Statements	Frequency of Respondents' Perception			
	Agree (4-5)	Neutral (3)	Disagree (1-2)	Mean n =379
TTPs have not strongly developed and promoted poor and women friendly technical skills.	235	74	70	3.67
Trainees selection system is TTP based. Therefore, poor and DAGS cannot get access even in the pre-training stage.	243	50	86	3.63
Women have to be involved fully in household work, so they do not have spare time for training.	218	62	99	3.55
In public school, vocational training programs have been conducted with convenience of TTPs rather than trainees' convenience.	185	60	134	3.18

In addition to above factors, the researcher found additional factors through discussion with respondents. Following were the important additional factors:

1. Majority of the Dalits wanted to work in their traditional profession with new technology and innovation but the available TVET programs were not adequately linked with their profession. Therefore, their participation was very low.
2. Females do not have encouraging participation in mechanical, construction and electrical trades because of the traditional beliefs of the parents and lack of confidence on work.
3. There was a lack of training programs directly targeted to females, Dalits and rural people, so the participation of DAGS was nominal.
4. Most of the technical schools except a few public schools were located in urban areas. Most of the parents did not want to keep their daughters in rented house far away from home and the poor cannot afford cost in urban areas.
5. All the formal technical education and vocational training programs had entry requirement of minimum qualification of class 10 but most of the poor, Dalits and female youths did not meet such educational requirement. Therefore, DAGs were not getting access to TVET.
6. There were no regular vocational and skill-training programs in technical schools. Therefore, information of vocational programs could not reach to the DAGS and the people in the remote areas.

The factors of female participation in TVET results identified in this study were similar with the findings of Nepal human development report (UNDP, 2004), which states, "The women's burden of work in Nepal (16 hours) is much higher than the global average for three reasons. First, reproductive work is much more intense because the home continues to be the centre of nature and socialization. Second, maintaining household is highly work-intensive, particularly during the peak agriculture season. Third, participation of women in Nepal in productive activities is one of the highest in the world". Considering the women involvement in household work, Employment Fund Secretariat (EFS) and Skills for Employment Project (SEP) introduced flexible training time in the rural areas which contributed to increase women participation to vocational skills training (SEP & EFS 2012).

In addition to the above respondents, researcher conducted individual discussion with 14 TVET graduates. All the respondents said that the poor and DAGs had difficulty in getting information about training. Moreover, high training cost was another factor that contributed to limited access of DAGs to TVET. An ex-Kamaiya graduate of masonry training from Kailali said, "The poor and rural people were unable to get information from newspapers and they are unable to pay training fee".

The above statements indicate that the poor and rural people did not have easy access to information regarding TVET programs. It was because of the TTPs' approach of promoting their training programs

through national newspapers, which are far from the access of poor and rural people. In the district level, information is available at the district headquarters and that too on the hands of educated and well off section only. TTPs had not made use of innovative promotional approaches to disseminate information targeting the poor and DAGs. They still practice the traditional advertisement tools. This finding has been supported by the initiatives of vocational training awareness campaign conducted by SEP (ADB, 2009). Due to the awareness campaign information reached to the poor and DAGs and participation of Dalits and women reached 25% and 53 % respectively (SEP, 2012).

Two thirds of the respondents expressed that there was a lack of education and awareness among the poor and DAGs, and TVET programs were developed only for higher-level educated person. An entrepreneur from Baudha, Kathmandu said, "There are many people in village and poor communities who can come for training if they are supported with awareness about importance of TVET". A parent of female training graduate from Jhapa said, "The education level of Dalits, women and the poor is low and they have lack of knowledge about training which will result into their very low participation".

The above statements highlight the need for mass awareness program on TVET. Similarly, there are regular programs in all technical schools on TSLC level. However, these programs are not relevant to the people with education beyond class 10. There is a lack of well-designed and regular TVET programs targeting people with education level of class 10 or below. The lack of awareness program and quality TVET programs are equally responsible to reduce participation of poor and DAGs. Besides, majority of the respondents identified other major factors such as urban-based training institutes, mismatch between training programs and job market, to affect the participation of poor and DAGs. Similarly, rigid timing of training inhibits the opportunity for poor people and females who prefer not to be engaged in training during daytime. An employer from Balaju said, "The poor cannot afford training cost but if training programs are linked together with employment e.g. training in the morning and day time work in the workshop, they can generate income and are able to pay for training cost".

The above statement indicates that there is a lack of flexibility in the operational calendar while introducing the TVET programs. There is a considerable mismatch between the programme operation of TTPs and learning needs of the clients. They have not considered alternative approaches to open opportunity to integrate more poor and DAGs participants in the TVET programs.

One-third of the respondents said that blanket system of providing stipend to the females, Janajatis and Dalits benefits only to the educated and rich people. This had hardly been able to support the poor and disadvantaged communities. Cultural, social and attitudinal aspects were the other important factors adversely affecting the access of poor and DAGs to TVET. An employer from a hotel said, "I give priority to females in all kinds of jobs but it is difficult to get females because there is still existence of social stigma". The following case studies (1, 2, 3, 4 and 5) are related to these factors.

Cases Related to Traditional and Social Factors:

Case 1: Blue collar jobs hardly appreciated

An electrical graduate of BTTC said, "I am working in Nepalgunj as an electrician not in Lahan, my own place because most of my neighbours knew that I was graduated as a Sub Overseer but I am working as an electrician where I have to use hammer to break the wall and I also do wiring". If his neighbours saw him in this position he would not be treated as Sub-Overseer. Therefore, he did not want to show his real work in his village.

Case 2: Behaviour of rich adversely affects the poor

A graduate of mechanical trade from Balaju said that he would spend NRs. 1,500 per month for his living cost but most of his friends spent about NRs. 5,000. He never went to canteen even for daytime snacks and tea but most of his friends took lunch and dinner in canteen. This experience was very sad as a part of his life.

Case 3: Social stigma towards skilled work for females

An entrepreneur from Baudha said that conservative thinking adversely affected the access of women to training programs. Once one of his relatives came into his shop and requested him to find job for his daughter. He suggested the former to send her for housekeeping training to work in hotel. He replied that he did not want to send his daughter for 'uncivilized' work. Then he suggested joining a mechanical training to work in entrepreneur's own workshop. Again, he replied that mechanical job was for males not for females. After all, the woman did not take any training. Instead, she got married and became a housewife. She had been suffering due to lack of money to spend for daily expenses.

Case 4: Preference to customary work

An entrepreneur of Auto Workshop from Balaju said that he recruited a trainee mechanic from dalit (Chyame) caste. He was quite good at work and his health was suitable for mechanical job. He was enjoyed with the work but his father forced him to quit the job and went back to their traditional job of a Sweeper (Chyame). Consequently, he left the job of a mechanic.

Case 5: Participation in training for money not for acquiring skills

A principal of technical school from Kathmandu said that a boy from Musahar community came to apply for three months-long house-wiring training. He was selected in the entrance exam and submitted all the documents. At the time of registration, a staff of TTP asked him to pay NRs. 6000 for tuition and admission fee. He was surprised and said that he was there to participate in training to earn training allowance but not to pay. Therefore, he did not join the training but returned home.

The case studies presented above suggest that the economic conditions differ even within Dalits and Janajatis. The present system of providing stipend in a blanket approach to Janajatis and Dalits hardly benefits the poor because this approach makes no distinction between the poor and the well off.

The social, cultural and attitudinal factors are so intensely rooted that they adversely affect accessibility of the poor and DAGs to TVET programs. The society does not have a positive attitude towards females involved in hotels and non-traditional occupations. There were some vocational training programs where participation of DAGs was high because they were entitled to get additional training allowances on top of free tuition fee. Such provision amplified the expectations of DAGs towards allowances rather than obtaining the skills.

Conclusions and Recommendations

TVET programs can contribute to reduce poverty through employment generation. It can enhance employability of the graduates and strengthen the capacity to establish small and micro enterprises in the beginning. However, poor and disadvantaged groups are not getting enough opportunity to participate in TVET programs due to poor economic condition, lack of information and awareness on TVET, social stigma, lack of social recognition to skilled workers, TVET providers are in far away from rural areas, and programs are unable to show clear linkages with employment. Similarly, lack of training quality and lack of time flexibility of TVET programs are also the hindering factors to provide access to TVET.

Therefore, There should be sustainable TVET funding mechanism to DAGs e.g., soft study loan, subsidy which ensure their participation. Each and every citizen should get information on TVET programs. It can be

possible through awareness program on TVET and information dissemination mechanism to provide all DAGs even in rural areas. There should be demand based quality TVET programs and clear linkages with employment market. To attract DAGs and other youth in skilled work, there should be motivational and social recognition element in TVET programs and person who involved in skilled works.

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Role of CTEVT in delivering health related human resource service in Nepal

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Abstract

The article has tried to depict the demand and supply situation of health related human resources particularly middle level technicians in the government sector. Since the biggest employer of such human resources is the government sector; private sector now has come up as a prominent employer. Hence, the scope of employment in private sector could not be incorporated in the article. Therefore, the article has foreseen the need of a detail study of demand and supply situation addressing both public and private sectors to identify the gap between employment and unemployment, so that remedies can be recommended to narrow down the unemployment problem as well as producing appropriate competent human resources.

Introduction

Health service is fundamental right of every citizen and it is important to improve living standards. It is not possible for overall development of a country without competent human resources. "Health as a fundamental right of the people" is a globally recognized value. Three Year Plan (2067/068-2069/070) has set up its main objective to ensure citizens' fundamental right to have improved health services through access to quality health services without any discrimination by region, class, gender, ethnicity, religion, political belief and social and economic status keeping in view the broader context of social inclusion (TYP, 2011). The production of health human resources is the most important aspect play vital role in order to achieve the goal of national plan. More importantly, only quality health human resources can contribute to provide quality health service in the country. Most of Nepal is covered by mountain and hills so providing health service to all citizens who are living in remote village is challenging. Before 1990, the availability of health service in most of the remote parts of the country especially Karnali Zone was almost negligible because the production of health manpower was limited. Very few medical colleges and technical schools under Tribhuvan University even in main cities produced middle level health manpower and they were consumed in Kathmandu and major cities of the country (KTS, 2011).

Karnali Technical School was the first Technical School which launched four years Community Medical Assistant (CMA) in Jumla District from 1982 intake taken from Grade Seven and six graduates were graduated in 1986. Gradually, Karnali Technical School expanded nursing program in health trade to fulfill need of middle level health workers in the remote place of the country. It was time before establishing Karnali Technical School in Jumla that limited health posts were established in Karnali zone and surrounding hill and mountain areas and to find trained health workers was like searching valuable pearls in the ocean. Even to get Citamol by the people was difficult and many death cases were happened because of basic health services. While Karnali Technical School begun to produce CMA graduates and they went to be engaged in Health Post as the On-the-Job (OJT) trainees, poor people of the areas started to receive health services. The main purpose of the school was to employ the graduates in the local community so OJT placement was prioritized to catchment of Karnali Technical School. The catchment area of Karnali Technical School is all districts of Karnali Zone (Jumla, Humla, Kalikot, Mugu, and Dolpa) and 2 districts of Bheri Zone (Dailekh and Jajarkot) (KTS, 2011). This brief history of Karnali Technical School indicates how Council for Technical Education and Vocational Training (CTEVT) initiated to produce health related middle level skilled human resources to deliver health services in remote place of Nepal.

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Karnali Technical School that had opened pathway for producing health related skilled human resources has produced 634 graduates in CMA and 535 graduates until Fiscal year 2067/068. Similarly, Jiri and Seti Technical schools followed the trend of producing health related human resources. These three technical schools have historically contributed in delivering health services of the country by producing quality graduates when the country was facing acute shortage of the health human resources. After restoration of democracy in 1990, the Government of Nepal adapted liberal economic policy by encouraging private sector in technical and vocational education. Technical Education and Vocational Regulation 1996 opened the door for involving the private sector for offering program in health related trades. At present, CTEVT has intake capacity of 8842 graduates in Diploma level and 6548 in TSLC level respectively (ibid).

Demand of Health Human Resources

Health and social field is one of the potential sectors for economic growth. For the running fiscal year 5.6 percent growth has been estimated in this sector. It had recorded the growth of 11.2 percent last year. Bigger amount budgetary allocation and state's commitment to make health service accessible to all made its significant expansion and also being the important area contributing to GDP (MOF, 2010). Therefore, this sector is noteworthy to consider as a pillar for economic development.

Government has adapted the policy in order to establish a health post in each Village Development Committee (VDC). Health services have been provided by 96 hospitals, 5 health centers, 699 health posts, 293 Ayurvedic Service Centers, 3104 Sub-Health Posts and 201 Primary Health Centers all over the country (CBS, 2009). These hospitals and health centers require numbers of skilled human resources and there is a shortage of such skilled human resources especially in the far flung remote areas of the country. Besides, the public hospitals and health service centers, presence of private hospitals and medical college hospitals have also become one of the potential economic sectors in Nepal.

Presently, 147 private hospitals and 15 medical college hospitals are in operation at the various urban cities. The total number of beds at the private hospitals counts 12,310 beds which is nearly double that of public hospitals. In the last 14 years, the number of physicians in the public sector grew by 16 percent, nurse by 7 percent, and paramedics by 1.14 percent while the population grew by 34.6 percent. Increase in the number of private hospitals and medical colleges have also influenced the demand and supply for health related skilled human resources. Besides the public and private hospitals, Nepal has also observed a rapid growth in the number of health-related INGOs and NGOs for the past years. In 1994 only 47 health-related INGOs were operating in Nepal, but this nearly doubled to 81 in 2008. Similarly, in 1995 there were 110 health-related NGOs, which have grown to 2000 in numbers by 2008 (MOHP, Care and RTI International (2010).

The data made available by the Ministry of Health and Population (MoHP) on the sanctioned and vacant posts for the mid-level technical human resources indicate a clear gap between their demand and supply sides. In the Eastern Development Region there are altogether 3913 sanctioned posts for the mid-level health technicians out of which 848 posts still remains vacant. The data also reveals that out of the 5863 vacant posts in the Central Development region, 1398 posts are still vacant so far. In the Western Development Region only 972 posts still remain vacant out of 3779 sanctioned posts. The Mid-west Development Region has 822 unfulfilled posts out of 2572 sanctioned posts. Similarly, in the Far-west Development Region 468 posts are unfulfilled out of the total 1724 sanctioned posts. In total the number of vacant posts related to mid-level health technicians counts 4508 or 25.25% of the total sanctioned posts (N=17,851).

Table 1: Sanction and Vacant Position in government hospitals, health post and government departments.

Post Name	Development Region										Total	
	Eastern		Central		Western		Mid-Western		Far-Western		Sanction Post	Vacant Post
	S. Post	V. Post	S. Post	V. Post	S. Post	V. Post	S. Post	V. Post	S. Post	V. Post		
AHW	1116	135	1560	283	1047	225	717	185	482	161	4922	989
ANM Health Assistant	359	32	633	123	343	58	235	79	157	28	1727	320
Kaviraj Lab Assistant	265	124	349	183	263	132	223	162	142	96	1242	697
Lab Technician	57	23	100	39	82	34	41	14	36	3	316	113
Lab Technician	84	15	129	16	84	12	58	40	38	1	393	84
MCHW Pharmacy Assistant	37	21	92	61	37	17	27	23	17	13	210	135
Radiographer	778	158	1056	319	719	119	483	130	330	92	3366	818
Staff Nurse	3	0	29	27	4	4	3	1	1	1	40	33
Vaidhya	18	15	39	19	19	15	12	11	7	5	95	65
VHW	207	117	534	114	204	153	125	40	79	20	1149	444
	66	14	105	18	92	37	54	28	40	10	357	107
	923	194	1237	196	885	166	594	109	395	38	4034	703
Total	3913	848	5863	1398	3779	972	2572	822	1724	468	17851	4508

S. indicates sanction and V indicates Vacant. Source: Ministry of Health and Population, Planning Division, 2011.

The afore mentioned data indicates that there is less vacant post in mid and far western development regions in comparison to other development regions. In addition to this the concentration of private hospitals are being very high in the central and western regions and they have also the greater employment opportunities in this sector. The available data indicates that three quarters of the hospital beds are located in the central region and 13 percent in the western regions whereas eastern region has a share of 8 percent and 3 percent in mid-western region and virtually no private hospitals exist in the far western region.

Supply of Health Human Resources

CTEVT has mandate for producing Technical School Leaving Certificate (TSLC) and Certificate or Diploma level programs whereas a few colleges of TU, KU, BP Koirala Medical Science and National Medical Science offer certificate or Diploma level programs. Moreover, CTEVT alone caters technical and vocational education services in health trade over 90 percent of total national institutional capacity (CTEVT, 2011).

Technical and Vocational Education in Nepal refers to technical and vocational courses specially Technical School Leaving Certificate (TSLC) and Diploma or Proficiency Certificate Level (PCL) offered in Technical Schools and colleges. The entry requirement for TSLC program is SLC passed for the course of 15 as well as 18 month, whereas grade 10 passed for the course of 29 months. The entry requirement for 3 years' diploma/certificate level is SLC degree. CTEVT, an apex body for Technical and Vocational Education and Training (TVET) is responsible for policy formulation, coordination, quality assurance, and program implementation. Therefore, as per mandate for developing course curricula, CTEVT has developed curricula

for health programs of both TSLC and Diploma or PCL programs. These programs are organized and certified by CTEVT.

Intake Capacity and Production

TSLC	Intake Capacity			Production till
	Government	Private	Total	
CMA	78	3000	3078	55755
ANM	150	1680	1830	20624
Lab Assistant		1240	1240	10790
Ayurved	40	200	240	3367
Community Oral Hygiene		80	80	633
Amchi		40	40	0
Acupuncture				47
AAM		40	40	0
Total	268	6280	6548	91216
Certificate	Intake Capacity			Production till
	Government	Private	Total	
PCL General Medicine	62	1840	1902	2704
PCL Nursing	80	3720	3800	7051
PCL Medical Lab	30	1260	1290	96
Diploma in Pharmacy	40	960	1000	2190
PCL Radiology		450	450	0
PCL Dental Science		200	200	295
Ayurved		120	120	
Ophthalmic Science		40	40	19
Homeopathy		40	40	
Total	212	8630	8842	12355

Source: A Glimpse of Technical and Vocational Education and Training, Sanothimi, Bhaktapur, CTEVT/Research and Information Division (2012).

CTEVT has passed out altogether 103571 graduates in TLSC (91216) and diploma (12355) level of health related trade. A large number of graduates have been produced in CMA which count to 55755 graduates and followed by ANM. Certificate level program in health sector does not have long history as the program of TSLC level, so the number of production in certificate level is not as large as TLSC level. But, at present, the intake capacity of Certificate level health program is higher in comparison to TSLC level where intake capacity of certificate level counts 8630 and TSLC 6280 respectively. The main reason of increasing quota of certificate level health program is demand of graduates of nursing, lab and pharmacy trades in national and international labour market.

Besides the capacity of intake, the graph 1 and 2 below further show that 76 percent graduates have been produced in health trades both in TSLC and Diploma/Certificate level. Only 24 percent students have graduated on rest of the trades such as engineering, agriculture and others. These data indicate that out of

total trades or programs under CTEVT health related programs have heavy weight because of market demand.

Figure1: Trade wise diploma Level graduate production

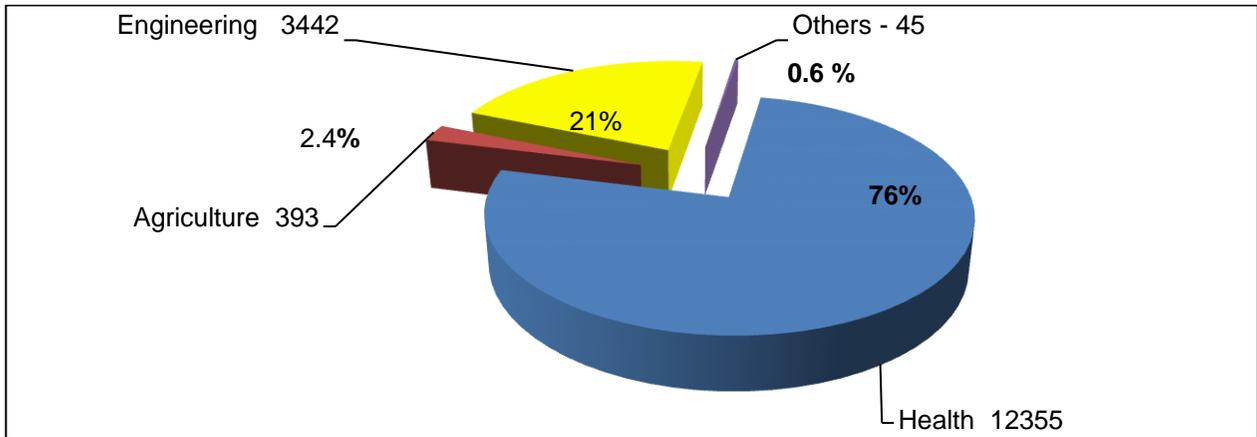
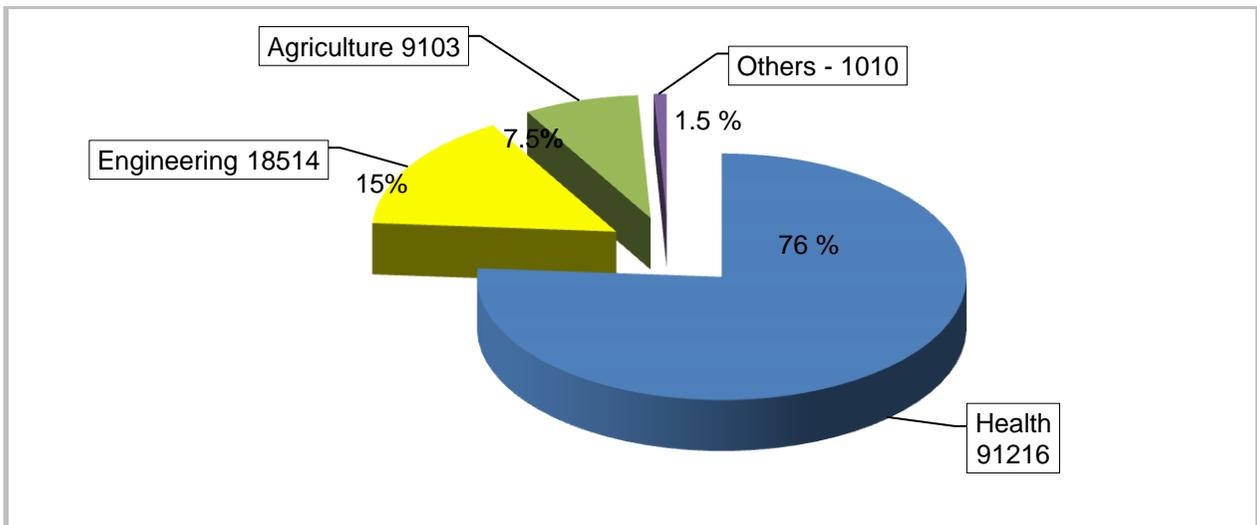


Figure 2: Trade wise TSLC Level graduate production



Source: A Glimpse of Technical and Vocational Education and Training, Sanothimi, Bhaktapur, CTEVT/Research and Information Division (2012).

Conclusion and Recommendation

The government sector, as one of the major employers to employ the health sector human resources, a mismatch is clearly noticed between demand and supply. By analyzing both demand and supply data, government holds only 4.3 percent capacity to absorb such human resources. This clearly indicates a huge proportion of health graduates produced by CTEVT might have been remained unemployed due to the limited number of consumption capacity in the labor market. So, before launching other new programs in health sector across the country, a detail study of demand and supply situation needs to be carried out in order to narrow down the gap which might have remained between employment and unemployment in future.

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Apprenticeship: An Overview

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Abstract

This article aims to provide a general overview of apprenticeship, its history, use of the model across the globe, its merits and limitations and other pertinent issues related to apprenticeship training. Apprenticeship system, the history of which harks back to the time immemorial, still retains its value and utility as practical and directly experiential learning opportunity to the learners. This is the system in which an aspirant learner is enrolled to an employer's workshop or an industry. He/she is bound up by a tri-partite agreement among apprentice, industry and Industry Training Authority (ITA). The apprentice is expected to learn knowledge and skills from the industry honestly and the employing industry has to provide conducive working & learning conditions and wages as per the agreement.

Although this is considered to be a more practical and industry-based learning approach sometimes, apprentices may sound paranoid about whether or not there will be provision for further studies after apprenticeship. However, abundant efforts by countries administering this training system in the world have ensured the provision for further studies with certificates recognized within and beyond the borders.

The duration/length of apprenticeship training largely depends on the criticality of the trade or occupation, choice of occupation and the interest of the apprentice. The direct advantages of apprenticeship training are quite discernible to apprentices; however most prominently a state recognition of the qualification paving a way for career advancement in future may be viewed as a great asset.

Apprenticeship training cannot succeed at the effort of one actor. The three actors, as mentioned above need to play their roles honestly according to terms and conditions laid down in the agreement.

The eligibility criteria for being an apprentice vary from country to country. It primarily depends on the countries' policies. Such policies also clearly spell out the ways to resolve critical issues, disputes, accidents etc. that, sometimes, arise necessitating immediate actions such as suspension or cancellation of apprenticeship. If completed successfully, apprenticeship training yields fruitful results to all the parties involved.

Introduction

The history of apprenticeship training goes back to the ancient times, when there was no formal schooling system. However, teaching and learning activities were carried out and accomplished through various ways. The guru-shishya tradition was in practice in traditional Indian and Nepalese cultures and religions. It was the tradition of spiritual relationship where teachings were transmitted from a guru "teacher" to a "disciple". In olden days too, the disciples learned trade-related skills and knowledge in a unique relationship of a guru and chela in an improvised or makeshift school called gurukul. There was a moral and disciplined bond of relationship between the guru and the disciple based on the genuineness of the respect, commitment, devotion and obedience. The disciple was supposed to stay and learn at the gurukul and at the same time assist his guru in household chores. Thus, it was considered the best way for imparting subtle or concrete knowledge and skills to the learners.

Even in the early oral traditions of the Upanishads in Hinduism during 2000 BC, the guru-shishya relationship is mentioned. The term "Upanishad" is derived from the Sanskrit which means "sitting down near" a spiritual

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teacher to receive instruction. This tradition is also reflected in the myth where Arjuna stays with guru Dronacharya to learn archery. (*adapted from: http://en.wikipedia.org/wiki/Guru-shishya_tradition*)

Apprentice and Apprenticeship

Apprentice

Apprentice is a learner of a craft; one who is bound by legal agreement to serve an employer in the exercise of some handicraft, art, trade, or profession, for a certain number of years, with a view to learning its details and duties, in which the employer is reciprocally bound to instruct him." (*Oxford English Dictionary*). Furthermore, an apprentice is person who not only learns and earns by working in an industry or workshop under a master craftsman (such as carpenter or shoemaker), but also legally agrees to abide by the rules and regulations of the industry and the state until the apprenticeship period is completed.

Apprenticeship

Now a days, apprenticeship is commonly known as a training system in which a learner is enrolled in an industry or a workplace for learning a craft or trade or occupation for a specified period of time in which he/she learns all necessary knowledge components and skills from a master craftsman or a mentor and is paid in return for the service he/she provides.

In other words, apprenticeship is an agreement among a person (an apprentice) who wants to learn a craft; an employer who needs a worker and the Industry Training Authority (ITA)¹ that regulates the entire apprenticeship process. It is a proven industry-based learning system that combines on-the-job experience with technical training to produce a certified journeyman (skilled person). Upon completion of the specified training period, apprentices receive a Certificate of Qualification. On average, 85% of the apprentice's training time is spent in the workplace; the rest is spent at a training institution. Apprenticeship is normally completed in two to four years depending upon the nature and criticality of the occupation or trade.

Grover (1986) cites Ruebens (1981) as "Apprentice is an industry-based initial training system characterized by a contractual employment relationship in which the firm or sponsor promises to make available a broad and structured practical and theoretical training of an established length and/or scope in a recognized occupational skill category. Apprenticeship is a work-study training scheme in which part of the training occurs on the job and part occurs off the job in a classroom or workshop setting."

Development of Apprenticeship across the globe

The practice of apprenticeship was also known in ancient Babylon, Egypt, Greece, and Rome. But as a system, apprenticeship was first developed in the later Middle Ages and then the system began to be used for teaching apprentices in specially designed setting under the supervision and regulation of craft guilds and municipal authorities. A master craftsman in his trade was entitled to employ young people or apprentices as inexpensive laborers in exchange for providing food, lodging and formal training in the craft. At the initial phase of its development, most apprentices were males, but female apprentices were also interested in crafts such as seamstress, tailor, cordwainer (soft leather shoe-maker), baker and stationer. Apprentices usually began at ten to fifteen years of age, and would live in the master craftsman's household until they acquired the skills and knowledge to be a craftsman. Most apprentices aspired to becoming master-craftsman themselves on completion of their contract. However, in the modern time, contrary to the age allowed in the earlier days, normally apprentices above 16 (with some exceptions) are allowed to enroll in the workshop, industries or workshops.

¹ Industry Training Authority (ITA), a government authority, may be known differently in different places.

Present Scenario

In modern times, apprenticeship model of teaching and learning is common in most of the European countries, the USA and also in some other parts across the globe. Apprenticeship has subsequently been brought under government regulations. The modern concept of an internship is similar to an apprenticeship (with some fundamental differences) in which universities have a provision for the students to complete internship in an actual workplace under the guidance of department head or manager. Also similar to apprenticeships are the professional development arrangements for new graduates in the professions of accountancy and the law in Great Britain.

Now-a-days there are many new apprenticeship vocations/occupations such as business, construction, community services, the automotive industry, engineering, manufacturing, machinery etc. in many countries viz. Britain, France, Austria, Germany, Denmark, Switzerland, Australia, Italy, America and also in some Asian countries such as Japan.

In Australia, apprenticeship is the new name for the scheme formerly known as 'New Apprenticeships'. Australian apprenticeships still encompass all apprenticeships and traineeships that account for 400 thousand people in 500 occupations. In Australia, the interested youth can become apprentices starting as early as 14 if there are willing employers.

Austria also administers apprenticeship training in dual education system in which company-based training of apprentices is complemented by compulsory attendance of a part-time vocational school for apprentices. The youth in Austria enter apprenticeship training at the age of 15. The apprenticeship in Austria is for 2 to 4 years, however the duration varies among the 250 legally recognized apprenticeship trades.

Likewise, in Canada, each **province** has its own apprenticeship program. At the completion of the provincial exam they may write the **Inter-Provincial Standard** exam. As interprovincial exam questions are agreed upon by all provinces, this qualification will satisfy the whole country.

Similarly, the countries like France, Canada, Australia, Germany, the USA etc. have been administering and offering apprenticeship training to aspiring and willing learners on several vocations such as automobile, textile, carpentry, marine engineering etc. and upon successful completion and competence of the designated skills and knowledge components, the apprentices are provided with state-recognized certificate.

Provision of apprenticeship after school education

After graduation from school at the age of fifteen to nineteen (depending on the type of school), students start apprenticeship in their chosen professions in most of the countries where apprenticeship has been regulated by the state or central government education system. School graduates usually have better chances for being accepted as an apprentice for sophisticated craft professions and also as apprentices in white-collar jobs in accounting, finance or administration. The number of years of schooling after which apprenticeship training is made possible depends upon the government policy, which further specifies the entry-age for the apprentices. Although normal duration of apprenticeship training is 2 to 4 years, it varies from country to country and also depends on the criticality of the trade or occupation. The apprenticeships usually end a person's education by the age of 18 to 20, but also older apprentices are accepted by the employers under certain conditions. This is frequently the case for immigrants from countries without a compatible professional training system.

The countries that are administering apprenticeship training should be clear and transparent about the issues like course-load, modality, policy, duration, age, grants or stipends, post-apprenticeship placements, employment opportunities and so on.

Types of apprenticeship training

Coy states (1989), "Apprenticeships vary in their degree of structure and formality." Coy further states, "Whether formal or informal, apprentice is directed toward training someone in a set of specialized skills."

The types of apprenticeship training primarily depend on occupations/vocations and their criticality. Highly sensitive apprenticeship occupations might call for compulsory, longer duration, school or industry-based and full-time apprenticeship training, where as less critical and sensitive occupations or crafts may require shorter duration and part time apprenticeship training.

In general, the types of apprenticeship training are:

1. School-based apprenticeship training

School-based apprenticeships are generally available to students from the age of 10. However, the age to start school-based apprenticeship varies from country to country. It allows students to complete their schooling while starting their apprenticeship in a workplace around 13 hours a week (Australian model) for practical experience.

2. Full time or part time apprenticeship

Full-time apprentices work and train full-time, usually from 36 to 38 hours a week. They are required to stay full time in an industry or workshop and learn under a designated master or mentor. Part-time apprentices and trainees work and train no less than 15 hours each week, averaged over a four-week cycle.

3. Compulsory or optional apprenticeship

Some apprentices are compulsory considering the criticality of skills in a particular trade. For example, in the Faculty of Medicine and Surgery, the Faculty of Education, the Faculty of Motory Science and in other critical and sensitive occupations/trades, apprenticeships are compulsory for all courses.

4. Traditional Apprenticeship

There are three important differences between traditional apprenticeship and cognitive apprenticeship.

First, in a traditional apprenticeship, the process of carrying out a task to be learned is usually easily observable. The tasks come up just as they arise in the real world of work. Learning is completely situated in the workplace. Apprentices are motivated to work and to learn the subcomponents of the task, as they realize the value of the finished product.

5. Cognitive Apprenticeship:

On the contrary, in a cognitive apprenticeship, one needs to deliberately bring the thinking to the surface to make it visible, whether it's in performing a task, reading, writing or problem solving. The teacher's thinking must be made visible to the learners and the learners' thinking must be made visible to the teacher. In cognitive apprenticeship, the challenge is to situate the abstract tasks in authentic contexts that make sense to the learners and to present a wide range of tasks contextually, varying from systematic to diverse, and to encourage students to reflect on and articulate the elements that are common across tasks. In cognitive apprenticeship, a trainer/teacher considers expert-like strategies involved in a task; designs scaffolds that encourage students to apply the strategies and activities are geared towards a relevant outcome.

Advantages of apprenticeship training

Apprenticeship training has multifarious advantages for the employers and the apprentices both. It provides the learners with an opportunity to learn under the guidance of a skilled person and earn some money at the same time. Similarly, the employer also gets workforce at reasonable costs. This kind of training is industry-based and provides real-work experiences to the learners, so they feel confident about the job. They develop

their cognitive level to understand even the underlying job tasks that are not visible to ordinary workers. They become aware of health and safety issues. They feel that they have a secure future. Apprenticeship training programs are crucial in establishing an improved workforce-employer relationship. Industry recognition and respect are also sustained.

Process

An apprenticeship is a three-way agreement between employer, apprentice and a government authority such as Industry Training Authority (ITA). All these three actors play crucial roles on their parts in accomplishing a common goal. There must be a very close coordination among these actors and it is very essential that they abide by the terms and conditions stipulated in the agreement. All three actors have their assigned roles and each actor's roles complement the roles of other actors. In some countries like Singapore, South Korea etc. the apprenticeship system appears to be functioning with the involvement of an extra party / actor and that is 'school'. In addition to 3 major parties/actors such as employer, apprentice/trainee and regulatory body, the school also plays an important role. This additional collaborative assistance of a school is required if industries do not have provisions or resources for conducting formal theory classes. If industry-school collaboration is agreed upon, then the school conducts classes as per the course requirement and provides apprentices/trainees with knowledge and skills which they need to learn prior to their industrial practice. This is situational and not the case everywhere. For example, in huge multinational companies, there are facilities and resources for formal theoretical classes as well as industrial practice for the trainees within the industry premises and thus they do not have to depend on other schools.

Cantor (1993) states that apprenticeship is a system of formal structured training, in which the student earns a realistic wage; the employer makes a long-term commitment to the student; and the training is for a defined period of time. The apprenticeship is not complete if one of the actors fails to perform its roles as laid down in the agreement.

Roles of Employer

The roles of the employer are to:

- ✓ be registered with the Industry Training Authority.
- ✓ provide a safe learning and work-environment to expose the apprentice to all areas of the trade.
- ✓ ensure a comprehensive exchange of trade knowledge and transferable skills.
- ✓ allow the apprentice to attend technical training and to write examinations as required.
- ✓ pay the apprentice's wages while the apprentice is on the job.
- ✓ maintain and help maintain a record of employment for the apprentice in Apprenticeship Record Book.
- ✓ recommend the apprentice for certification upon completion of their technical and on-the-job training.

Roles of Apprentice

The roles of an apprentice are to:

- ✓ locate an employer willing to undertake them as an apprentice.
- ✓ become a registered apprentice with a government authority.
- ✓ know what is involved in the trade: to learn; to apply skill; and to work diligently and honestly for the employer.
- ✓ take control of his/her own training and learning.
- ✓ maintain Apprenticeship Record Book and ensure that learning experiences are accounted for in a useable format.

- ✓ work safely and be familiar with the safety rules and regulations.

Roles of ITA

ITA is the Industry Training Authority recognized by the provincial authority or a central state authority. This authority may be named differently in different parts of the world. Most services that apprentices and employers will access are specified and controlled through the Industry Training Authority. The authority is mandated with and is expected to:

- ✓ register apprenticeship agreements.
- ✓ assess training hours according to the trades and qualifications.
- ✓ accept required assessment and exam fees.
- ✓ monitor the exams
- ✓ process the apprentice's certificates.
- ✓ work with industry and training providers to ensure that standards of training and completion of credentials are met and are consistent with industry needs and provincial regulations.

Eligibility to be an apprentice

Eligibility criteria to be an apprentice depends on various factors trades/occupations, subject and also state rules and regulations. The eligible starting age can be no less than 16 years; however, individuals must usually be 18 to be an apprentice in hazardous occupations. Program sponsors normally specify the minimum qualifications and credentials to apply, e.g. education, occupation, age limit, proof of age etc. All applicants are required to meet the minimum qualifications and criteria specified by the state or provincial authority. In addition, apprentices are expected to be physically fit and be able to perform the necessary tasks as required by particular trade or occupation.

The above-mentioned eligibility criteria should just be taken as general criteria, because the criteria may differ from country to country and occupation to occupation.

Limitations

Despite having numerous advantages of apprenticeship, a few limitations can't be overlooked. For example, in modern apprenticeship system, the students are sent for apprentices in some vocations they choose after certain years of schooling. They often carry expectations of conditions and behaviors at the worksite. If such expectations are not met, the apprentices may lose interest and quit the apprenticeship. Lack of work ethics to the job often causes problem and the tripartite apprenticeship agreement terminates without any fruitful conclusion causing problems and frustration to all parties involved. Similarly, apathy of apprentices towards their job causes low attendance and that directly affects attendance requirement. Moreover, lack of career awareness program before joining apprenticeship training has a greater impact on apprenticeship training. One of the common problems noted in some industries is the lack of quality working environment and safety regulations.

Critical Issues

Suspension or cancellation.

Apprenticeship can be mutually suspended or cancelled if both the employer and the apprentice agree. Sometimes, suspension or cancellation may be necessary because of poor performance by the apprentice, his/her serious illness or other justifiable circumstances. On the contrary, apprenticeship can be suspended if the industry, too, fails to provide the working and learning conditions as per the agreement. In such circumstances, the parties involved may notify one another with clear justifications and formally sign a termination paper.

Disputes

Disputes between the employer and apprentice arise during apprenticeship if one of the parties is not satisfied. If the disputes persist, the apprenticeship training is certain to be affected. In such a case, the Industry Training Authority (ITA) should be contacted immediately for resolving the problem whatsoever. Sometimes, disputes arise related to possibilities for further study and entry into the job market and such disputes must be foreseen and addressed in time. OECD (1990) states that the disputes, sometimes, crop up when the apprenticeships in industries or companies do accord little importance to subjects according to the university criteria and thus do not usually prepare the learners for universities. This may well become an insurmountable obstacle for those who aspire to achieve further educational qualifications. Such disputes apparently become problematic at some point of time during apprenticeship, if they are not addressed and clarified in time.

Major Accidents and Injuries

If an apprentice suffers a work-related injury or illness, the employer is responsible for notifying the insurance company of significant accidents or injuries within 48 hours. The employer must make immediate health service arrangements for the injured or the sick, before taking further actions.

Conclusion

Apprenticeship training is an industry-based practical approach of providing trade/occupation related training to the learners who agree to be enrolled as apprentices for a specified period of duration. It is a useful approach to providing knowledge, skills, attitude and employability skills to the learners in a real work situation. It provides the business and industries with aspiring and potential learners in their youthful ages where they learn and acquire competence, confidence and a qualification of skilled workforce. However, the success of apprenticeship training is not so easy. It largely depends on the cooperation between the employer responsible for providing conducive learning environment, motivation and support and the apprentice him/herself. The regulating body should also keep an watchful eye during apprenticeship.

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Contemporary TVET Management Practice in Nepal: An Overview

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Abstract

Since last five decades TVET management systems in Nepal has been experimented one after another. At present, TVET management is arranged by both government departments and autonomous council. Some government departments or agencies are also taking responsibility of short-term vocational and livelihoods training whereas the autonomous body, CTEVT is alone mandated for management of both technical and vocational education as well as vocational training. CTEVT was established by the Act under the principle of devolution, so CTEVT Act has made provision of council representing from various ministries, National Planning Commission, business/trade and industrial organizations and institutions. CTEVT has been provided authorities by its Act to be autonomous body for increasing efficiency and productivity of TVET sector, but some of authorities have been controlled enforcing legal provision and other administrative procedures. TVET system comprises a mix of public and private institutions. Although various funding models and principles are in practice in the world, Nepal has basically been practicing input based funding except some exceptional cases.

TVET institutions mainly follow the principles of two board categories of courses delivery which are: (i) national level course and (ii) institutional courses. As a national authority, CTEVT develops national level curricula or courses for technical and vocational education as well as short-term training whereas some individual training institutes develop courses especially only for short-term training but not for TSLC and Diploma/Certificate Level. For quality management, it has been practicing both norm-referenced and standards-based assessment.

Background

Nepal has practiced various management systems in Technical and Vocational Education and Training (TVET) during the past five decades. Nepal made an attempt at vocationalizing its education system in 1950s through the Basic schools based on Gandhian philosophy of economic self-reliance. In 1961, basic schools were discontinued because of the popularity of the academic English schools. Existing high schools which introduced vocational subjects were called multipurpose high schools: general education + vocational education = multipurpose. The government again introduced vocational secondary schools under National Education System Plan (NESP) in 1971 instead of multipurpose high school. Vocational secondary education was also impaired because of inadequate trained vocational instructors, well equipped training centers and capacity of institutional management. In 1979, trade schools were launched and Directorate of Technical and Vocational Education (DTVE) was established for the management of the trade/technical schools. Although the government had experimented a number of plans and programs, the institutional management was handled by the government department or committee.

The government initiated to manage re-structuring of Technical and Vocational Education and Vocational Training in 1989 under the principle of devolution. Therefore, Council for Technical Education and Vocational Training (CTEVT) was established in 1989 under Special Act. CTEVT was established as the autonomous body in TVET sector under the Act for policy formulation, coordination, facilitation and program implementation. However, many government departments such as Cottage and Small Industry Development Board (CSIDB), Department of Cottage and Small Industries (DCSI), Vocational and Skills Development Training Center (VSOTC) and Nepal Academy of Tourism and Hotel Management (NATHM) are still

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conducting vocational and livelihoods related training programmes. The institutional arrangement of these departments is managed by civil servants. In addition, some universities such Tribhuvan University (TU), Kathmandu University (KU), National Academy of Medical Sciences (NAMS) and B. P. Koirala Institute of Health Sciences are yet to phase out their Diploma/Certificate level programs in technical and vocational education. Out of total intake capacity of Diploma/Certificate level programs, CTEVT alone has over 90 percent of capacities to cater the programs (CTEVT, 2011). This has attempted to analyze contemporary management practices of TVET institutions in Nepal by referring basic TVET management fundamental principles.

Principles and Practices

There are number of principles and practices in TVET management which are being exercised in many countries in the world. Some relevant principles are presented here which can be related to Nepalese context.

Centralization and Devolution

Publicly funded TVET institutions are part of the structure of central government in many countries where budgets and programs are allocated by the central government. Institutional arrangement and teaching staff are civil servants. In some countries, devolution approach has been implemented through process of public sector management reform. Under this approach, public TEVT institutions have their own governing council that represent their stakeholders, may employ their own staff and are responsible for their strategic management (Preddey, 2009).

In Nepal, both centralization and devolution approaches have been practicing in TVET system. For example, CTEVT has their own assembly and council representing from various ministries, National Planning Commission, business/trade and industrial organizations and institutions associated with technical education and vocational training. The Assembly is responsible to carry out long-term plan and determine the general guidelines and policies and the council is responsible for implementing policies and programs that provided by the assembly. In addition, the council has authority to employ required staff to implement the policies and programs. However, some government departments and agencies (CSIDB, DCSI, VSDTC and NATHM), taking responsibility of vocational and livelihood related skills training, are part of the central government. These departments receive budget from central government and employees are also civil servants.

International experience indicates that the responsiveness, effectiveness and cost-efficiency of TVET institutions are enhanced by the devolution of management, financial and teaching responsibilities to the institutions themselves. Centralization of TVET management and delivery commonly translates into lack of incentives for staff to show and for TVET institutions to improve their performance. Centralization may also fetter the contribution of private institutions to TVET delivery (Preddey, 2009).

Autonomy and Accountability

Governing council of the institutions exercise the governance roles previously exercised by government officials in countries where public TVET institutions are given significant autonomy. Institutional autonomy is strengthened through the appointment of chief executives responsible to governing councils for their operational management. Enhanced institutional autonomy requires that governance and management arrangements are capable of achieving agreed objectives and maintaining the long-term viability of TVET institutions. A sense of institutional ownership develops that differs from traditional government ownership. Enhanced institutional autonomy provides stronger incentives for institutional managers and teaching staff to achieve better results (ILO, 2006).

The autonomy of CTEVT prevails through its Act from 1989 and is still exercising the governance and management roles of TVET institutions in Nepal. According to CTEVT Act, Vice-Chairman, the policy chief

and Member-Secretary who exercises executive power are appointed by the government through ministerial cabinet. In the beginning day of CTEVT, autonomy was fully exercised and the council of CTEVT, the highest decision making body for TEVT institutions, took many decisions without taking concurrence of Ministry or government. For example, 25 percent of teaching allowance was provided to instructors of technical schools by the decision of the council. Gradually, the tendency has evolved to minimize the autonomy of CTEVT through various government decisions and means. For example, the budget of the teaching allowance for instructors was stopped since 1999 because of the government decision which was the beginning of erosion of its autonomy. Similarly, the council had an authority themselves to develop and implement required by-laws and regulations such as financial and administrative without approval of the government. The government restricted through third amendment of the CTEVT Act in 2005 by enforcing to receive approval of the government to implement the by-laws. After third amendment, CTEVT even cannot determine staff conditions of services herself. However, CTEVT is still practicing autonomy to develop courses, curricula and skill standards and conducting skill testing examination as well as monitoring the technical schools and colleges. In some cases, CTEVT is also being weak to exercise autonomy adequately because of instable government resulting the frequent change of chief executive officer as well as inadequate supports. In this context, the exercise of autonomy depends upon the institutional capacity and support of line ministry.

While in many countries autonomy is granted to the institution for increasing efficiency and productivity, accountability framework is developed to manage increasing operational and financial risks of government. Generally, these arrangements may include restriction on autonomy and prescribed monitoring and reporting processes such as specified arrangements for financial report. As the same principle, the CTEVT Act has made provision of financial and accounting procedures which needs to follow the same accounting and reporting format of the Government of Nepal. The Office of Auditor General is authorized for financial auditing. In addition, the government has reserved the right to give direction on technical education and vocational training, standardization and certification of skills testing. In addition, each month CTEVT must report progress of the programs and institutions to the government through Ministry of Education (MOE) under the principle of performance and accountability management.

Inputs and Outputs or Outcomes

The inputs to TVET systems are the financial resources committed to TVET institutions. Under input-funding systems, government fund thee input costs of the public institutions directly (e.g. by funding teachers' salary, costs of materials, utilities, etc). The outputs of TVET institutions contribute to desired outcomes and include the knowledge, skills and competencies acquired by students. Developed systems of autonomous TVET institutions are more amenable to funding based on outputs or outcomes. Output funding systems are customarily based on outputs equivalent full-time students, but may include additional performance elements (e.g. course completions or graduations). Institutions are customarily resourced on the basis of what they cost (input funding) rather on the TVET services that they deliver (output funding) in centralized TVET systems (ibid) and same principle is generally applied in Nepal. Even budget for CTEVT is also allocated the basis of required cost or estimated cost. This may result in weak linkages between budget allocations for TVET and desired TVET outcomes. However, some projects especially funded by external development partners have practiced outputs based funding. For example, Employment Fund under Helvetas supported by Swiss Agency for Development Cooperation (SDC), Department of International Development (DFID) and World Bank; and Enhanced Vocational Education and Training (EVENT) under MOE supported by the World Bank are adopting output and outcome based financing to implement their programs and activities (World Bank, 2011).

Governance and Management

Governance and management can operate at three levels: government; governing councils, chief executive and senior management. The roles of governing councils and chief executive and the distinction between governance and management become more significant as TVET institutions gain enhanced autonomy. In centralized TVET systems, the government agencies assume governance roles and chief executives are related to the role of line manager. MOE and Council of CTEVT play role of governance and technical colleges and schools are concerned on achieving goals determined by the MOE and CTEVT under management role.

In developed TVET systems, governments relinquish their governance roles in favour of governing councils. Chief executives have responsibilities similar to those of the chief executives of private-sector companies and the members of governing councils have responsibilities similar to those of boards of directors (Preddey,2006). Table 1 outlines some distinctions between the governance and management roles for autonomous TVET institutions.

Table 1: Differences between governance and management roles for autonomous TVET institutions.

TVET institution's governance	TVET institution's management
Governance sets overall direction by strategic planning and determining goals, strategies and policies (<i>What to do</i>).	Management is concerned with achieving goals in accordance with strategies and policies (<i>How to do</i>).
Governance ensure management accountability through reporting mechanisms.	Management provides information for effective governance and management accountability.
Governance determines institutional objectives (outputs and outcomes).	Management is concerned with the means for achieving objectives (outputs and outcomes).
Effective governance is hands-off	Effective management is hands-on.

Source: Gasskov (2006). Vocational Education and Training Institutions: A Management Handbook and CD-ROM. Geneva, ILO.

Public and Private Provision

TVET systems comprise a mix of public and private institutions. Public institutions are usually owned by the government or autonomous body such as commission or council. The financial resource for public institutions is received from the government to cover the cost of the program generally targeting to students from poor families. Therefore, in some jurisdictions, public institutions are constrained from charging tuitions fees because tuition fees may also discourage participation in TVET by students from poor families. According to ILO, governments have two distinct sets of interest in public institutions (ILO, 2006):

- as owners and regulations of institutional assets (ownership interest);
- as funders (purchasers) of TVET services (outputs) that the institutions deliver (purchase interest).

Governments do not own private TVET institutions and the main financial source of the institutions is tuition fees. However, tuition fees may also discourage participation in TVET by students from poorer families. The disincentive effects can be mitigated by the student support policies that include scholarship, targeted fee rebates and non-discriminatory loan schemes. However, students who graduate from either public or private institutions receive same recognition and are not treated differently (ibid).

Nepal has also adopted mix systems where both public and private institutions offer TVET programs. Government departments still offer vocational and livelihoods training funding from government revenue and institutional management and teaching staff are civil servants. Similarly, CTEVT is only the agencies that authorized by the Act to provide both technical vocational education and vocational training. Public technical

institutions or schools are offered the programs under direct control of CTEVT and receive financial resources to deliver program within the limits of revenue derived solely from their public funding. At present, CTEVT manages their TVET programs through public and private institutions. Public institutions are constituent technical schools and community schools. Community schools deliver the TVET program as the Annex program. Annex program is an innovative approach to offer TVET within the premises of community high schools sharing the physical facilities and human resources.

Private institutions are authorized to organize technical and vocational education especially for Technical School Leaving Certificate (TSLC) and Diploma/Certificate level programs under CTEVT affiliation. The private institutions mainly charge tuition fees to the students and they bear their cost from the income of tuition fees. CTEVT has made legal provision that private institutions must provide scholarships to ten percent of total enrolled capacity to the poor students, so that tuition fees should be subject to stringent to students of poor and disadvantaged families. In addition, private institutions offer vocational and livelihood training by charging tuition fees. However, the recent trend is changing that private training institutions offer vocational training without charging tuition fees by bidding the programs of government departments and bilateral and multilateral funded projects or programs (Poudel, 2012). By using authority of the Act, CTEVT affiliates the private institutions under the management of private companies and individuals. Although the Act has clearly provided authority to CTEVT to accredit the TVET institutions both public and private, accreditation of these institutions has not been started yet.

TVET Policy and Legal Frameworks

National TVET policies are guiding principal document which make certain assumptions about the roles of TVET in economic and social development. The assumptions are generally adopted the principles of minimum level of education that is necessary for individuals to function in society, as well as for social cohesive, or that equitable access to TVET promotes equal opportunities for employment and income. Comprehensive national TVET policies may acknowledge the respective roles of public and private institutions and whether private TVET institutions are able to access public funding and, if so, under what conditions. Similarly, legislation is required in developed TVET systems to provide appropriate legal environments for TVET institutions. It generally includes provision for (Preddy, 2006):

- institutional status and autonomy;
- the role, appointment and composition of governing councils;
- employment of staff;
- funding, performance and accountability framework;
- control on institutional assets and financial operations.

As the authority granted by the TEVT Act, CTEVT had made the first TVET policy in 1999 and the endorsed by the CTEVT assembly, but the policy could not come into action because of various reasons and one of them was the lack of acceptability and ownership by the government ministries and departments. Because of the past bitter experience, with the thorough preparation started in 2004, CTEVT was able to draft the Technical Education and Vocational Training Skills Development Policy that was endorsed by the ministerial cabinet in 2007. The second policy was also become nowhere for their implementation and it never came into implementation like the first previous policy. Again the Government of Nepal endorsed new Technical and Vocational Education and Training Policy, 2012 and it is still waiting for its implementation.

Financial Management

According to ILO, public funding is allocated to TVET institutions by governments for two main reasons: to achieve desired national outcomes: and to enable societies in general to benefit from the recognized public

benefits (externalities) of TVET. Governments have options in how they fund public TVET institutions. The alternative funding methodologies can be variously categorized as (ILO,2006):

- input or output-based funding;
- negotiated or normative funding;
- absolute or relative funding.

Regarding input or output-based funding, it has already been discussed above. Negotiated funding systems involve negotiations between TVET institutions and central funding agencies. Under normative funding, funding norms/standards/averages, funding formulae and other quantitative factors are used, i.e. funding allocations are calculated rather than negotiated. In absolute (bottom up) funding, TVET institutions submit their own funding requirements and overall budgets are the sum of institutional bids. In relative (top down) funding, finite resources are allocated centrally to TVET institutions in portion to their assessed needs (Preddy, 2009).

Public TVET institutions in Nepal are generally resourced by input funding system. Annual budget of CTEVT receives through MOE by the government treasure. The budgets are prepared by the respective technical schools under CTEVT and they submit their proposed budget to the government through CTEVT. Major cost items, such as capital expenditure on new buildings or equipment that serves the whole institution, are customarily dealt with at the level of chief executives, subject to approval to the council and are covered by the government. Similarly, the cost of government vocational training institutions or training programs is also managed by the government fund under input funding system. For public TVET institutions to be granted a level financial autonomy, their governance and management must be accountable for their use of public resource. Financial accountability of CTEVT is customarily achieved by preparing financial statements in accordance with generally government accepted accounting practices.

Course and Curriculum Management

ILO has categorized the TVET institutions in the principles of two board categories of course delivery which are (ILO, 2006):

- *national level courses* leading to national qualifications that are developed by centrally, have automatic credit-transfer arrangements and can be delivered by any accredited TVET institutions.
- *Institutional (providers) courses* meeting local needs that are developed by individual TVET institutions, lead to institutional qualifications, often have no (or limited) credit transfer arrangements and remain the intellectual property of initiating institutions (ILO, 2006 p.216).

Courses or curricula in Nepal have been developed at national level as well as institutional level. CTEVT develops curricula or courses at national level for TSLC and Diploma or Certificate level through its curriculum board. Technical committees in the related subjects are formed consisting of subject experts under Curriculum Board. The concerned technical committee prepares the curricula in the respective subject and forwards to the Curriculum Board for its approval. Finally, the board approves the curricula or courses on the recommendation of the technical committee and the approved curricula are sent to the institutions or providers (CTEVT, 2011).

Short-term vocational training courses are developed followed by the principles of DACUM approaches. Expert workers are invited in DACUM workshop and they identify and list out tasks what they are doing in the real work environment or workplace. In some cases, individual institutions can design and develop the short-term curricula or courses themselves. The institutions may or may not receive approval from the curriculum board of CTEVT. However, majority of short-term courses or curricula are developed and approved by the CTEVT and most of the TVET institutions apply or follow CTEVT developed curricula (Ibid).

TVET qualifications, courses and curricula and their delivery require periodic evaluation. Curricula are sensitive to changing job requirements. CTEVT conducts studies to evaluate graduate outcome or employers' views of the relevance of courses in the workplace. These studies include tracer studies or employer and graduate satisfaction surveys for course relevance, design, delivery, assessment and cost-efficiency.

Quality Management

Quality is generally assured through internal quality management systems subject to periodic audit by external quality agencies. Quality itself can be defined from three different perspectives (Preddey, 2006):

- quality as *excellence*: make comparisons between similar qualifications, courses and institutions; those that score highly on a predetermined scale are judged as excellent and therefore of high quality;
- quality as *value-for-investment*: based on stakeholders' perceptions of whether qualifications, courses and institutions meet or exceed expectations, taking into account the time and money invested in them;
- quality as *fitness-for-purpose*: assesses the performance of qualifications, courses and institutions against stated outcomes or intentions.

National qualifications frameworks are agreed system of qualifications and national qualifications are awarded by approved bodies are recognize that students have prescribed levels of learning outcomes, standards or competencies. National qualifications framework support the coherent integration of qualifications and are intended to provide national consistency in the recognition of TVET outcomes. National TVET courses and qualifications are generally developed, maintained and approved by designated central agencies. The agencies operate through appointed expert/industry committees assigned the tasks of setting skills standards and of developing and maintaining national TVET qualification (ILO, 2006).

Once skill standards are agreed, standard-setting bodies may organize tests of attainment or agree to delegate this assessment function. Professional assessors are generally experienced teachers and may include the staff of TVET institutions. External assessments provide assurance against fraudulent standards and testing practices.

In developed TVET systems, skills assessment may be carried out by accredited TVET institutions or by registered assessors. Moderation processes may be required to ensure that accredited TVET institutions and make consistent and reliable judgments about the work of students seeking qualifications (Ibid).

Effective TVET institutions have procedures for monitoring the progress of students through their TVET courses that allow the identification of students who are not coping. Student performance is measured against planned sequences of learning and achievement. Assessment arrangements need to be explicit to guide students to clear understandings of what is expected of them (Ibid).

Process for the evaluation of student performance in general falls into two broad categories (Preddey, 2009):

- *norm-referenced assessment*: rank students against their peers according to their performance in class tests and assignments and offers an indirect measures of skills and competencies achieved.
- *Standards-based assessment*: confirms that students have (or have not) achieved specified standards in defined skills and competencies, but does not rank their performances against their peers.

Nepal has adopted both norm referenced and standards-based assessment system. For the assessment of technical and vocational education, norms referenced assessment system has been applied where students are evaluated their performance in class tests and assignments or project work. Examination Board under CTEVT conducts examination at national level for the major portion of both theory and practical; and certain portions of theory and practical examination or tests are allowed to the technical institutions or colleges. In

terms of evaluation of TSLC students, 20% theory and 80% practical weightage have been allocated, on which concerned institute evaluate for 50% of allocated theory and 50% of allocated practical weightage as internal assessment. Similarly 60% theory and 40% practical weightage have been allocated for the evaluation of the students of Diploma/Certificate level programs. The concerned institutes are entitled to administer 20% allocated theory and 40% allocated practical examinations internally.

Although Nepal is yet to apply education qualification frameworks, skills testing system has been practicing to certify formally and informally as well as traditionally learned skills since 1983 which is almost similar system of Vocational Qualification System. The skills test is the corresponding performance test based on the occupational skills standards. National Skills Testing Board (NSTB) under CTEVT has introduced occupational classification, skills standards, testing and certification. NSTB has developed national occupational skill standards in different occupations from elementary level to level four. However, skills test certificate is recognized in government sector for the job purpose. They (skills certified persons) cannot have a vertical and horizontal access for further academic study. Skills test is designed and conducted especially for short-term vocational training graduates and not for TSLC and Diploma/Certificate level of students. In the part of short-term vocational trainings, there is limited proper mechanism to monitor the quality performance of the training institutes, however the quality of the individual trainees are measured through applying skill examination under NSTB (CTEVT, 2011).

To initiate the monitoring and supervision activities in the technical schools and colleges, CTEVT is also responsible to form necessary monitoring and supervision team by assigning subject related expert from CTEVT and professional councils to carry out the monitoring and supervision of the constituted, annex and affiliated institutions. The team provides feedback on a written form to the concerned institutions and CTEVT management to take further initiatives to improve or take actions for necessary reward and punishments. The standard tools developed by the CTEVT Technical Division are administered to measure the quality performance of the both public and private training institutes that are involved in TSLC and Diploma/Certificate level programs. However, the quality performance rating is done for the institutions which are categorized under five levels¹. Regarding public institutes, the appropriate corrective measures and recommendations are delivered directly to the concerned institutes. In the case of private institutes if they are categorized under Level Four and Level Five, they are barred to enroll new students for the year (CTEVT, 2012). After measuring the improvement of the year they are allowed again to enroll new batch of student for the next year.

Level One:	Highly effective, if obtained 85% or above on rating scale.
Level Two:	Effective, if obtained 75-84% on rating scale.
Level Three:	Adequate, if obtained 60-74% on rating scale.
Level Four:	Adequate with recommendations, if obtained 45-59% on rating scale.
Level Five:	Inadequate, if obtained less than 45% on rating scale.

Conclusions

Management of TVET in Nepal has been experiencing one after another modalities in every ten or fifteen years. The modalities which tested were basic schools, multipurpose high schools, vocational secondary schools and at present technical schools and polytechnics. The trade schools were managed under the CTEVT since 1989 following by the principle of devolution and autonomy. CTEVT has managed and affiliated

¹ Based on Supervision and Monitoring Report 2012 made by CTEVT, private institutes have been evaluated mainly in four categories such as highly effective, effective, adequate and adequate with recommendations.

both public and private TVET institutions in Nepal under their own assembly and council representing from various government, industries and trade associations. However, CTEVT has various difficulties to exercise the autonomy because of the government decisions and amendment of the CTEVT Act. In some cases, CTEVT is also being weak to exercise autonomy because of instable government resulting frequent change of decisions and inadequate support. Therefore, institutional capacity of CTEVT needs to be strengthened to exercise autonomy fully. Moreover, amending legislation and regulation to minimize the autonomy and key frequent change of executives of CTEVT needs to be stopped for the efficiency and productivity of TVET institutions. Vocational trainings are still offered by various government departments that should bring under single umbrella so that effective coordination will be placed and the problems of resource duplication will be minimized.

Nepal has adopted mix systems where both public and private institutions manage TVET programs. Institutional arrangement of public institutes together with staffing is done by CTEVT staff. Private institutes affiliated by CTEVT manage financial and institutional arrangement from tuition fees, but the students receive the same recognition whether they graduate from public or private institutions. Regarding quality management, CTEVT administers examination or test based on norm-referenced assessment for TSLC and Diploma whereas skills testing examination for short-term vocational training followed by the standards-based assessment. Institutions are monitored using the standards tools each year and they are categorized into five levels.

CTEVT has affiliated the institutions to the private companies or individuals. Although the Act has authorized CTEVT to accredit the TVET institutions, the institutions either public or private are yet to be accredited. Therefore, CTEVT should immediately begin to accredit both public and private TVET institutions which will have foundation for quality assurance of TVET graduates and institutions.

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Measuring Competency for Optimizing Learning Opportunity to Ensure Quality Skills Training

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Abstract

Questions by the practitioners in the Technical Education and Vocational Training (TEVT) sub-sector on quality of training had motivated the authors to think about a methodology assuring that each trainee has learned all the tasks that s/he has to perform under specific trade the individual is trained in. Therefore, during the implementation of Skill Development and Employment for the Informal Sector in Nepal (SEIS)², different methods were thought to address this issue. Hence, the competency-based monitoring (CBM) approach of measuring competency was developed. Since it is a simple method of monitoring progress and achievements during the training, orientation to the trainers can be done either through training of trainer (ToT) and/or support for practicing at the training place by the project monitors/back-stoppers.

This approach assumes that all the other aspects of monitoring is in place and therefore, it puts entire focus on actual training and makes efforts to track the progress by individual trainee. In this process, performance of each trainee is measured against each task under any specific trade the individual is trained in. At the end of each task, assessment is done by trainer and ranks the learning level ranging from scale 1 to 4, which of course can be further simplified. In case of the individuals unable to get to the scale 1, the trainer has to record deficiency and reasons – need for more practice, need for adding more training equipment or materials, improvement in training methodology, additional support such as numeracy and literacy etc. the follow up action by trainee, trainer, training provider and project monitoring staff is then recorded.

As per this method, the trainer and trainee need to work in close collaboration. While ensuring an appropriate training-learning environment is considered training provider's responsibility, project monitors' presence and in special cases, making additional support/ decision is critical for encouraging trainer to use the tool, which ultimately becomes an important support to ensure achievement of the trainee.

Based on the experience, it is found as a very useful tool for trainers. But in order to create positive pressure, presence of project monitoring staff - physically or tracking records through mails is equally important.

1. The Context

The Central Bureau of Statistics (CBS) data (2011) inform that although the unemployment rate is 2.2 percent, the proportion of underemployment (32 percent) and inactive population (22 percent) is quite high and thus, partially explain the reason for persistent poverty in Nepal. This also indicates the limited contribution of agriculture in the GDP despite engagement of 74 percent people in agriculture (NPC 2011). The traditional farming technic and fragmented land size, agriculture sector is believed to be considered less attractive for the youth. The hydro power and tourism, considered other areas with promising potential have yet to grow to absorb labor and address the un/underemployment. The public sector capacity for employment is limited and also due to unstable political situation, industrial sector is more or less

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² Implemented in Bara, Parsa, Rautahat, Sarlahi, Banke, Bardia, Kalali and Kanchanpur districts by HELVETAS Swiss Intercooperation Nepal since January 2011, SEIS is a 3-year project funded by European Union (EU). The total budget of the project is EUR 1.8 mio including EU contribution of EUR 1.4 mio and remaining by HELVETAS Swiss Intercooperation internal funding. The contents of the article are the sole responsibility of the authors and can in no way be taken to reflect the views of the EU.

stagnant. Therefore, nearly an estimated 1500 people, which is mostly youth, leave each day for foreign employment.

All these difficulties have reflected down in people's livelihoods. Although, poverty has been claimed to have reduced to 31 percent in 2003/04 from 42 in 1994 (NPC/UNCT 2005) and now to 25.4 percent in 2011 (NPC 2011), people's livelihoods have been persistently difficult mainly because of limitations with employment opportunities.

One of the reasons of the un/underemployment or migration for foreign country employment, of whom large majority are unskilled labor, is the limited technical skills with people. As found by sporadic research, the proportion of unskilled laborers ranges up to 70 percent of the total migrants searching foreign country employment. It is believed that there are about 400,000 new entrants each year in the labor market but training system of Nepal hardly offers skills training to less than one-fourth (CTEVT 2011) of it and that too with training questionable in terms quality.

In order to address the training needs in the country, various skills training projects have been implemented or are under implementation. Results of skills testing and employment rates have been indicators of success of training. However, skills testing also may not measure all the competencies required for performing a job. Similarly, training projects have tendency to claim or related researches show that more than 70 per cent of the graduates are employed. However, in order to get the employment, all the tasks specified in each trade the individual is trained in may not be required. However, in order to optimize returns of the investment for the individual and the training providers, through competency-based performance measurement approach, efforts have to be made to ensure that each trainee learns each task under the trade she or he is being trained in.

2. Objective of the CBM and this Article

The objective of the competency-based monitoring (CBM) system that HELVETAS Nepal developed through its Skill Development and Employment for the Informal Sector in Nepal (SEIS) project is to ensure that the individual trainee is trained in all the tasks stipulated in the curriculum/OSS/OP and the trainee is capable to execute them in the workplace. The aim of this article is to share this innovation by SEIS/HELVETAS is to assist the training providers and trainees optimize the learning opportunity.

3. Methodology

The CBM methodology was developed while implementing the SEIS project and later practiced by Employment Fund, another HELVETAS project, in a sporadic basis. In that sense, it is a simple tool developed through learning-by-doing, testing and mainstreaming in the other projects. Therefore, rather than a scientific paper, the content in this paper is largely based on the findings and learning gained during the project implementation process.

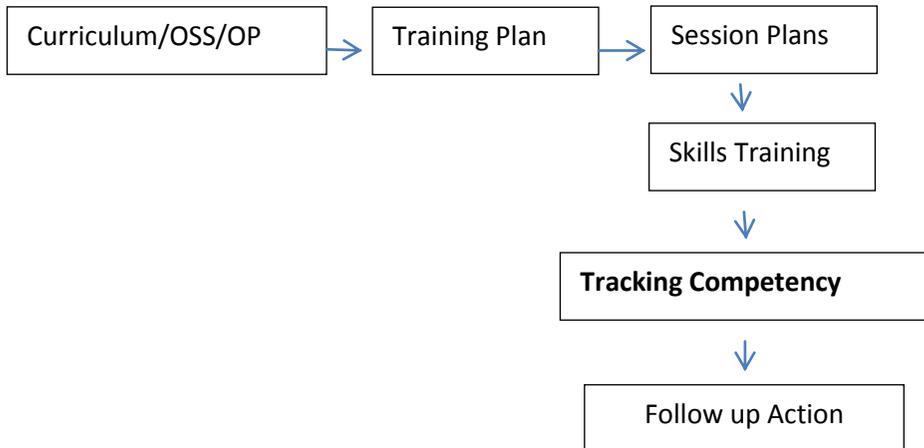
4. The CBM Framework

With assumption that the other components of the skills training monitoring – process monitoring, training preparation monitoring, training environment monitoring, placement monitoring and income verification - process takes place in all projects, the CBM focuses only in the tracking of competency achieved during the specific technical training sessions of a specific skills training.

Based on the curriculum, the trainer needs to prepare training plan which then helps prepare and implement session plans. It is the session plan where the CBM is linked to monitor the progress in tasks (Fig 1). Then after completion of each task, the trainer measures the competency gained by the trainee. Firstly, the

technical skills competency is measured by the trainer, shared with trainee as feedback for improvement. Then the result is shared with project monitors. The trainer's follow up to fill in the competency gap and practice by the specific trainee is critical to complete training successfully.

Fig 1: Training Environment and Tracking Competency



5. The Components of CBM

Various training programs and projects have been found monitoring i) training environment, ii) pre-training preparations, iii) actual training, iv) post-training support and v) income verification. The CBM is sub-system of a monitoring system/ plan. As these components are common to all skills training programs, they are not explained here. However, as the CBM has specific focus to measure progress of the skills gained, only essentials of CBM is discussed in this paper.

6. Essentials of the CBMS

In order to carry out CBM effectively, there is need for curriculum/OSS/OP or lists of tasks that has to be trained in or learnt by a trainee during a specific period. The trainer, the training provider institution and the project monitoring staff need to work in collaboration. The trainer needs to prepare a matrix (Annex 1) before starting any specific task related training. After completion of the sessions on specific task, in addition to the observation during training, the trainer needs to note down the performance level. This action needs to be continued until the completion of each task. In the same sequence, the project monitoring staff needs to visit the training events and try to get to know the updates. In large projects, this can be done by introducing the matrix through ToT and circulating the monitoring matrix through e-mail. Then the project monitoring staff could give feedback, or work with management for necessary backup for any specific trainee.

7. Process of Competency-Based Monitoring

7.1 Measuring Progress in Competency

The matrix in Annex 1 is prepared by recording: i) name of trade which is being planned for training, ii) the task to be monitored and iii) name of trainees.

After completion of training of each task, the responsible trainer makes internal assessment. Each individual is assessed against each task and scores are recorded. The result is recorded in the matrix. While rating the

individual, if she or he is found with competency lower than very good, the trainer has to record the gap to be filled in through follow-up action and his or her plan to improve the trainee's competency and bring at very good standard. This is necessary because, the CBM spirit is to ensure each individual trainee is at 'very good' standard in each task. The reason for ensuring this rating is that each trainee has competency to perform each task.

The plan then needs to be shared with the training manager. If additional support is required, it needs to be shared with the project monitoring staff. Therefore, depending upon individuals' capacity, with joint effort of trainer, training manager and project monitoring staff, the individual should move from far right end of competency measurement column to its far left.

7.2 Follow-up actions

The trainer has to share the outcome of the monitoring with the training manager for informing the responsible persons for follow-up action. Responsible persons for follow-up actions may vary with the nature of the deficiency.

The SEIS experience indicates that mostly the deficiency is because of limitations on understanding or need for additional hours for further practice to ensure that the individual can perform the task finely which is sometimes called "*Haat basna/ saffa huna banki*". Therefore, clearly this responsibility remains with the trainers responsible for specific training.

As follow-up to this, the trainer has to arrange additional practicing time to the specific individual until s/he is able to move from 4th to 3rd or 3rd to 2nd and finally to the 1st level i.e. very good standard. Until this happens, the individual needs to continue the training and the trainer has to keep monitoring the competency level. This is in practice by Employment Fund project in a modified version.

In some cases, the deficiency was because of limitations with training environment. Then the responsibility remained with the training managers, while in other cases, limitations in terms of equipment, machines, tools or training materials were observed. This finding was then immediately shared with the training manager and then the latter had to make necessary arrangements immediately. The SEIS has adequate experience in all these aspects.

Immediately after one week of training, during the CBM, some of the trainees, particularly females from disadvantage communities engaged in mason training were found limitations in making measurements. Further assessment revealed that this deficiency was because of limited basic education skills. Then the project management immediately arranged additional sessions for enhancing literacy and numeracy skills. Although, this was not within the scope of the formal contract with the T&Esp, the project addressed this problem. This support was very instrumental for helping these participants complete their training and ensure employment.

7.3 Frequency of Monitoring

In order to make the CBM effective, it is imperative to have regular visit of the project monitoring staff to the training locations. The regular visit of monitoring staff creates positive pressure on training manager and trainer to deliver training effectively. In case of SEIS, in agreement with the trainer and based on training plan, tentative schedule was developed. Based on this schedule, the SEIS monitoring staff used to visit the training sites. The progress recorded in the competency measurement format (Annex 1) was shared by the trainer with the monitoring staff. Then, based on trainer's plan, the next monitoring visit was planned.

7.4 On-the-Job Training (OJT) and Employment Placement (EP) Plan

In order to sustain the skills gained during the training sessions, the OJT and Employment Placement (EP) plans were considered integral part of the CBM from the beginning of training. Therefore, T&Esp managers

were coordinated to put the OJT and EP plans in place. This would again create a positive pressure to at least, plan the institutions where the individuals would be placed for OJT. Although, HELVETAS follows the outcome-based management strategy, the EP plan helped T&Esps in preparing the placement plan on time.

8. Difference between CBM and Skills Tests

Often there are confusions regarding the difference between the competency monitoring and skills test. In order to clarify this confusion, based on SEIS experience, the differences are recorded in Matrix 1.

Matrix 1: Some Differences between CBM and Skills Test

Issues	CBM	Skills Test
Timing	It starts from the completion of any specific task mentioned in the training curricula.	It is normally done after the completion of skills training
Duration	There is no duration for CBM. As long as the trainer is not satisfied, the practicing, follow up and monitoring can be continued.	Normally, it is one time activity.
Correction possibility	This is the major feature of the CBM. As it is done after completion of one task, the trainer has enough time to go back to the task and train the trainee as follow-up action.	As it is done after the completion of training, there can be only limited scope for the trainee to get the same training environment.
Assessor	It is done by trainer responsible for training.	It is done by external, who normally the trainee does not know.
Frequency	Done several times and normally correspond with the number of tasks in the curriculum.	Generally, it is one time activity.
Role of trainer	Trains until the individual achieves the competency which is ensured when the individual's competency moves from score 4 to 1.	Not such a systematic role is normally in practice.
Role of project monitors	After getting report from the trainer, the project monitors may give feedback to the trainer or work with training manager in case of special support needed.	Not much such support is in practice.
	Ensures regular visit in the training sites for getting updates and follow up.	Not required except for ensuring necessary preparations.
Role of training manager	The person/ institution has to ensure that the trainer is conducting the monitoring regularly. In order to take special decision, for example, if additional resources are required to support a specific individual, the training manager needs to sit with the trainer and project monitor.	Makes arrangement for skills test but does not have role beyond that.

9. Conclusions

Although CBM might have been in practice in different ways by practitioners, here efforts are made to systematically present tying it up with curriculum/OSS/OP, session plans etc. The experience has proven that it is very helpful for assisting a trainee complete her or his training effectively. Although, it is a simple tool, with regular use of this tool, it helps guide the trainer throughout the training to ensure whether the trainee is making required progress or not. It also provides an opportunity to the trainee to have self-assessment of progress. As short-term skills training program have limited duration for training and learning, knowing individuals' performance level on time is absolutely critical. Experience has shown that it helps training

providers to prepare each trainee for skills test and ensure that each of them will be able to get through the skills test, which is a strong indicator to be confident that they are able to handle the responsibilities at the world of work.

Based on SEIS and EF experience, this approach of monitoring is applicable to all kinds of projects, small and big projects. The project monitors could make technical monitoring by putting positive pressure to trainers. It has proven to be easy to handle by trainers and monitors and create spontaneous environment to get quality results. However, project management, training providers and trainers need to be comprehensively prepared on this monitoring tool during ToT and refresher training or during initial phase of project implementation in order to make its implementation effective.

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STAGE OF ECONOMIC GROWTH AND EMPLOYABLE TECHNICAL SKILLS

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Abstract

Delivering market-friendly skills training is one of the necessary conditions for development. It needs to assign training priorities in view of potential employment in both formal and informal sectors, which demand low-cost manufacturing skills as well as high value-added skills depending upon their respective production systems. As Nepalese economy is still in a factor-driven stage, its production system is largely dominated by the primary sector, which is strongly associated with labor-intensive manufacturing system characterized by low value-added products. When the country moves from such factor-driven stage to investment and innovation driven stages, it needs increased number of trained workforce with upgraded skills. As these upgraded skill holders embrace the potentials to enhance productivity in the enterprise, they also attract higher wage rates for their own benefit.

As skills are the factors spurring economic growth, their demand increases with the growth of enterprises and their production system associated advanced technologies. Since the premium for skills acquired by a training graduate is reflected upon his/her successful utilization of competence in the labour market, the reallocation of labour from the low productivity area to high productivity area at times becomes a common phenomenon for the enterprises. To adjust this process, the enterprises attempt to strike balance by making choice between the capital-led investment approach and the labour-led investment approach. This becomes important because more allocation on the capital-led (i.e. profit-led) activities would curtail the scope of social expenditure, while more allocation on the wage-led activities (from social perspective) would also limit the returns to investment for economic growth. Therefore, the strategic dilemma for the enterprise will be whether to invest more on profit-inclined economic activities or to hold its workers with investment on wage-inclined social benefits. To ensure an win-win situation, the investment on the skilled workers should focus on enhancing productivity, while increasing profit margin for the enterprise so that it will be able to higher wage rate to workers. In view of this, all training programmes to be linked with employment should emphasize productive performance target among others.

I. INTRODUCTION

Nepal has been emphasizing increased employment opportunities for youths who join labour market as new employment seeking candidates due to their eligible age each year. Though the agriculture sector is dominant in the Nepalese economy, this sector alone cannot absorb all these job seekers. Realizing this, the Council for Technical Education and Vocational Training (CTEVT) has been promoting technical training on its own and in affiliation with other technical schools. In recent years, the private sector training providers are also emerging to offer such training services.

Despite the good intentions followed by both public and private sector technical training providers, linking training with employment becomes often difficult due to the mismatch of training courses with the employer's preference. Poor quality standards of training and the lack of competency focus in curriculum are some of the reasons for such situation. To overcome these, delivering training based on the market research is essential.

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II. DRIVERS OF ECONOMIC GROWTH AND DEMAND FOR TECHNICAL SKILLS

The stage of economic growth of a country provides scope for employment opportunities, which prescribe the need for training priorities. Some employment opportunities concern with informal sectors, while others belong to the formal sector. Depending upon the growth condition of the economy, some training programmes need to focus on low-cost manufacturing skills, while others should be designed for high value-added skills.¹

As the Nepalese economy is still in a factor-driven stage, the primary sectors dominate its production process. It means greater utilization of the natural resource base as important means of production. It emphasizes making best use of land, labor and capital. This kind of economy needs labor-intensive manufacturing characterized by low value-added production process. Such system has the advantage of surviving market competitiveness due to lower cost of production but it payless attractive wage to the workers.

As much as the economy relies on primary sector, it does not demand so much of high level training to support the production process. One of the reasons being it cannot afford higher training cost against the low level of values added by the trained workforce. Such situation leaves the producer with no choice except relying on the lower level skills training.

In a growing economy, the stage of growth often remains transitional between the factor-driven and investment-driven status. While moving from the factor-driven stage to investment-driven stage, the country needs increased number of trained workforce on upgraded skills. As these upgraded skill holders will have the potential for contributing higher productivity, they can also attract higher wage rates for them.

At the transitional stage, the coexistence of lower and upgraded skills is a natural phenomenon. Such situation prevails till the workers of higher level skills catch up the production process at its full-fledged level. The requirement of higher level skills is often needed for the superior exposure of the workers towards the improved technologies. The production system at such situation might function well only when the value-addition for the product is high.

At the investment-driven stage, the adoption of advanced technologies becomes necessary for surviving market competition with high-quality products. It demands flexible production system based on the needs emerged from market research. Such research should explore opportunities for high value-added goods and services.

Studies reveal that the ratio of technician against the crafts-level workers is 1:50 in Nepal. It is one of the highest in the region as compared to the neighboring countries. In other developing countries, the ratio of engineer, technician and skilled worker is about 1:5:25. These figures indicate small proportion of the movement of Nepalese workers towards higher skills due to small growth in the industrialization process.²

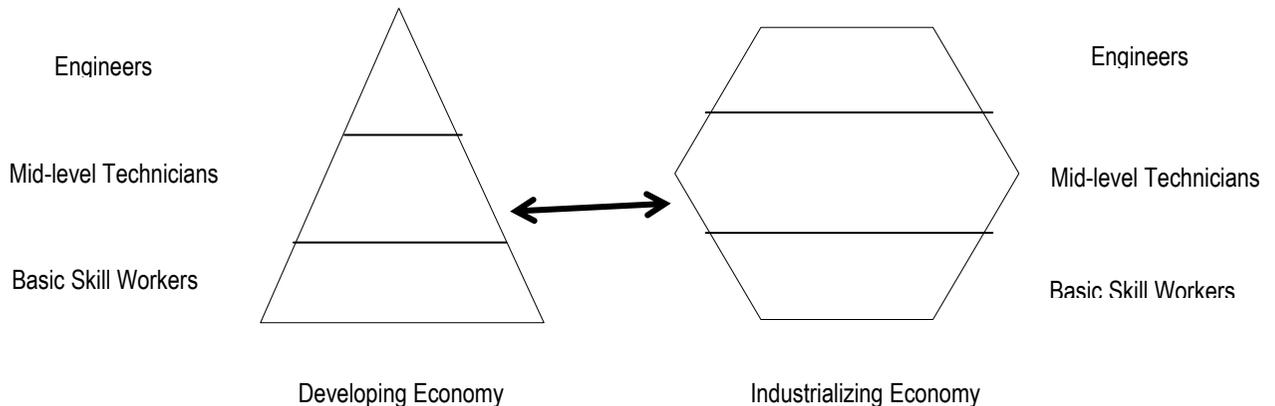
Being dependent on the factor-driven growth, the production process in Nepal is largely guided by the labor-intensive nature of the manufacturing system, which relies more on the service of workers who have attained basic education or are illiterate and also have low-level skills. It is so in the context of maintaining lower cost of production in the enterprise. This becomes necessary to capture the market as affordability condition of the consumers in developing economy is often low.

¹Asian Development Bank (2004), *Improving Technical Education and Vocational Training Strategies for Asia*, Manila, Philippines.

²ADB.2004a. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Nepal for the Skills for Employment Project*. Manila. (April 2004 draft)

The demand for technical skills training is largely influenced by the stage of growth and the structure of economy. If the economy is at the developing stage, it is quite natural for the country to have large number of low skilled workers at the bottom of the human resource pyramid with only few high skilled workers on the top. In the case of developed economy, the situation will not be triangular like this. Instead, it will be hexagonal with large number of skilled workers at the mid-level with balanced number of low and high skilled workers at the bottom and top. Following Chart illustrates such situation:

Chart 1: Workforce Structure in the Developing and Industrialized Economies



Source: Derived on the basis of ADB (2004), Human Resource Investment Project Sri Lanka, Project Preparation Technical Assistance Report, ADB, Manila. :

When the country moves towards the path of investment-driven growth (like in the middle income countries), the focus of production also transfers toward high value-added goods. At such situation, the industries require to focus on standard products with greater efficiency so that they can capture competitive markets. This stage of economy can even accommodate imported technology for the manufacturing of goods. It can then attract foreign investments in the joint ventures. This links the national economy with international production system. To encourage this kind of integration, the Government needs to improve physical infrastructures including introduction of the regulatory mechanisms. Such process when backed by the technical training would contribute to the growth of economy further.

When the economy grows well, the country can emphasize innovation-driven growth as one of the measures. This is a trend in high economic growth countries, where the knowledge-based production services are emphasized for market competition.¹ It requires higher education, improved capital markets and high skills training. It also follows export orientation and insists the country to adopt skills upgrading training.²

III. INVESTMENTS FOR QUALITY SKILLS

¹Singapore is one of such examples where its knowledge-based economy emphasizes high level of innovation, adaptation and commercialization of new technologies to introduce to the global technology frontier.

²Asian Development Bank (2004), Improving Technical Education and Vocational Training Strategies for Asia, Manila, Philippines

The country cannot capture envisaged economic growth without striking balance between the investment for physical and human capitals. If the investment is more on the physical capital leaving the investment for human capital behind, it does not allow taking advantage of effective use of technology for greater productivity. As much as the investment grows in applying new technologies, subsequent increase should be made for investment in the human capital as well.

Whenever the demand for human capital increases, it subsequently invites the need for training more workers, some of them as new while upgrading the skills for some other existing ones. It reallocates patterns of labour distribution from the low productivity area to a high productivity area. At such situation, the transformation requires to become both capital as well as skills intensive. In a poor economic growth condition catching up such move becomes challenging for most of the enterprises.

In order to capture new opportunities, accommodating changes is indispensable for all enterprises. If they fail to move hand-in-hand with the contemporary market changes and adopt improved technologies, their production system might not be market responsive. Considering such situation, the adoption of improved technologies and preparing workers for quality skills become an important part of progress.

The objective of developing technical skills training is to benefit both enterprises and workers. The enterprises benefit from increased productivity while the workers benefit from their access to employment. In view of this, the technical training programmes in Nepal have been emphasizing link of the graduates with work after training. To make this achievable, the training programmes should deliver contemporary performance skills standards preferred by the potential employers. It requires developing compatible aptitudes among the training graduates so that they can add value to the productivity in the enterprise. In view of this, bringing training and employment closer to each other has been considered one of the pre-requisites. It is envisaged as one of the tools for reducing unemployment in the country.

The support for development of skills should take into account potential working environment the graduates may join after training. Since the formal sector has limited absorption capacity because of the poor economic condition of the country, the assessment of working conditions should cover employment potential at both formal and informal sectors. However, the informal sector being less organized than the formal sector, their jobs can be less-lucrative to the training graduates from the perspective of gainful employment opportunities being looked for.

When the investment for training is targeted for informal sector employment, despite knowing the risk of guaranteeing gainfulness, the returns to such investment might be questionable in economic sense (i.e. in terms of making other investment choices among various competitive needs). At such situation, the investments made for training can be justified only on the basis of welfare perspective (i.e. opening employment opportunities to the unemployed youths). This becomes important also on the ground that quality of training cannot be compromised to reduce the scale of investment. When the expectation is high quality training, it also needs higher scale investment.

IV. MARKET DEMAND FOR COMPATIBLE SKILLS

Skills are the factors spurring economic growth. In view of this, the country needs to keep trained workforce coherent with the labor market demand for promoting progress.¹The skills premium labeled in training is reflected in the utilization of graduates in the labour market. Their competence is recognized by the employers/enterprises only when they demonstrate competitiveness in enhancing production. It helps the enterprise to increase investment on the technological advances and become more responsive to the market demand.

¹O'Conner and Lunati (1999:28–29) quoted in Asian Development Bank (2004), *Improving Technical Education and Vocational Training Strategies for Asia*, Manila, Philippines

Economic growth can be stimulated with advances in technology. Their adoption should benefit the production system with greater efficiency. The adoption of advanced technology can take place in one of the four possible ways: (a) learning by doing; (b) learning by adapting; (c) learning by design; and (d) learning by innovation.

Depending upon the type of technological advancement situation followed, the skill requirement demanding training will vary. For the learning by doing situation, basic training might be enough as it does not expect transfer of technology from worker to another. For the learning by adapting process, skills will be required first on necessary transferable technical and vocational skills. Likewise, the learning by design will require much more technical skills to translate the requirements into an operative system. Similarly, for learning by innovation, it will require high level creativity and education in basic science besides the technical skills.

The human resource trained should possess skills suitable to the advancing technologies. It helps to enhance production and affordability in the enterprise. It can then stimulate enterprise to increase investments in new areas. It also helps the enterprise to stand market competition.¹ Without support of human resources having suitable skills, production cannot be enhanced just by technological advancement.

The stock of human skills is an asset for the enterprises. However, its availability alone cannot catalyze economic advancement but its lacking can jeopardize the growth process. Experience elsewhere reveals that the countries having a stock of skilled workforce can however adjust to the market response faster than those not having such skilled workforce pool. It is mainly because the enterprises having the stock of skilled workforce can become more flexible in their market response and absorb the improved technologies soon.

The market which demands high quality product subsequently requires skilled workers to produce such quality. If there is any gap in the supply of skilled workers, it affects the product quality and therefore the marketing prospect of the product. If the country has a pool of less skilled workforce only, it cannot go beyond the market of non-traded commodities (e.g. services than the traded commodities such as manufactured goods).

If the production system relies on a value chain process, the productivity of one skilled worker depends on the productivity of another. At such situation, acquiring compatible as well as market-responsive skills by both is necessary. If there is any inadequacy in the skill of workers involved in the production process, it simply

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Source: ILO (1998)

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adds cost to the economy because of low efficiency of production. When the production efficiency is low, its output cannot be linked to the competitive markets.

Acquiring skills alone will not be sufficient for production unless necessary scope is created for proper utilization of such skills in the enterprise. Most of the enterprises have a tendency of organizing work with necessary division of labor under the close control of the supervisor as they assume breaking the tasks into elementary components would ensure greater efficiency. However, such division tends to limit the scope for gaining new skills by the workers. Wherever possible, the training providers should share such information with the employers to ensure greater efficiency and effectiveness of the work accomplished by their graduates.

The enterprises aiming to survive market competition often accommodate changes in their working system. It requires improved performance skills among the workforce. As these enterprises face competition, ensuring incremental improvement in the production of quality goods and services is their need in the context of winning market trust both cost and quality wise. These ambitions associate with the challenge of updating their workforce skills as they are to be made ready for market responsive production. The enterprises relying on this kind of changes should follow multi-skilling approach to train their employees with rotational job responsibilities. For this, the workers should possess both cognitive and diagnostic skills for the changing tasks.

As human capital developed through training is an investment for future pay-offs in the enterprise, the investment made for training should emphasize increase in both production as well as productivity. This is important for justifying returns to investment in training. The win-win situation in training occurs when the enterprise pay higher wage rate to the trained employees while maintaining its profitability at a reasonable level. This is important because the effective utilization of training not only depends on the quality of skills acquired by the workers but also the opportunity provided by the employers for earning at a market rate gainfully. Therefore, it is essential to link training and employment with the performance target of the enterprise. It requires market-friendliness of the skills acquired by training graduates.

Training can be promoted in two ways: (a) Portable training where the worker can be transferred from one working environment to another situation for higher wage; and (b) Specific training where the worker cannot be transferred as the skills acquired by him/her can be used only in the enterprise for which he/she was trained. For both types, the employment market should function efficiently. Any weak training of the workforce also means poor contribution to production in the enterprise. Therefore, making the quality of training comprehensive as well as better is necessary for ensuring competitive performance. The Government alone cannot meet all these targets. Therefore, promoting involvement of private sector is necessary in this regard. Compared to the public sector, the private sector can adopt flexibility in making the training more market-friendly.

When the service required is quality seeking and competitive, the investment for training should pay attention over these aspects. The technical standards should be monitored during training to see if the sessions delivered are compatible to the market needs. If there are deviations, they should be corrected before it is late. One of the ways of making the training more compatible to market needs is to cover the sphere of both wage and self-employment opportunities. To promote self-employment besides wage employment, the training graduates should be supported with loan for initial stage investment in the enterprise. Such support not only enhances entrepreneurship but also opens new avenues for upgrading skills as the business grows.

The training providers should also examine factors beyond the reach of training in making the training results market compatible. It needs wider information exchange among the key stakeholders, who share a common goal of training for employment to ensure economic progress. Such sharing helps to adopt strategies for more productive results. It also contributes to enhance knowledge about the kinds of changes required to make the performance skills compatible the market demand.

V. HARMONIZING CURRICULUM

Most of the training programmes are structured for a fixed timeframe to cover specified subject areas. When these fixed elements are covered and the specified time duration is over, the training programme also gets completed. However, the aptitude of the trainees attending such programmes being heterogeneous some trainees are more ahead in learning the contents of the delivered sessions as opposed to the others. Contrary to this situation, the employers at the workplace assume that all trained workers from a training programme have acquired uniform performance skills and can contribute to the production process equally. To fill this understanding gap, the time-based training courses need to develop well thought time plans, subject areas to be covered and the methods to be applied in training while designing their curriculum.

Three design practices are very common for the development of curriculum. They include: intended curriculum, enacted curriculum and experienced curriculum. The intended curriculum is designed by providing outline standards and guidelines which the trainers are expected to follow in delivering training. Such curriculum is developed in view of the intended outcomes to be achieved. It provides hints on instructional prescriptions. It describes specific skill sets that make up an occupation and emphasizes the concept of 'doing things' over the concept of 'knowing things'.

Another form of developing curriculum is setting up an enacted curriculum. It emphasizes incorporation of contents and the pre-specification of teaching designs. It also outlines the assessment methods to be applied after the delivery of training sessions. It suggests content of training in view of the teachings required in both classrooms and practical settings.

The teachers following enacted curriculum are expected to apply both technical and pedagogic skills in teaching. It also allows them to maintain some flexibility by making judgments for the integration of contents emerged from both routine and non-routine experience. It opens room for shaping the training content and method in view of the prevailing learning facilities, capacity of the instructors to train and new areas relevant for training.

Training courses can also be set in the form of experienced curriculum. It is developed on the basis of feedback obtained from the earlier contents and methods covered. It blends learning from what former graduates had experienced. It covers learning lessons emerged from the enacted curriculum recognizing the role of trainees as meaning makers. Though it anticipates improvement over the intended and enacted curriculum, it is sometimes questioned on the following grounds:

- What extent of flexibility it should maintain in the adoption of intended and enacted curriculums to satisfy stakeholders' (i.e. the priority of trainees, trainers and employers);
- Whether it should emphasize mastery learning (i.e. the learning associated with what others speculate the trainees to learn) or emphasize appropriated learning (where the trainees learn in a full-bodied way relying on their beliefs and interests); and
- Is not there a risk involved in curriculum-driven learning as they are likely to be mastered but not the appropriated?

It is often said that if learning is highly prescriptive, it will be involve more administrative character in the delivery of session inputs than meeting the individual's interest for learning. As curriculum is just one of the means to an end, the interventions for training should also be viewed from open but guided learning process. It should not only emphasize skillfulness but also adaptability to the workplace.

In all training programmes, it is necessary to introduce refresher system to avoid the risk of acquiring incomplete skills. It helps to overcome in-built weakness of the time bound and teacher-centered training. Since the training should be made competency-based, it should emphasize appropriated learning. It should be made learner-centered focusing on both skills and competency. Skill should be understood as a task or

the group of tasks to be performed with specific level of competency, whereas competency should be viewed as skills applied in the performance with specific standard.

The advantage of competency based training is that it focuses on the success of each trainee. Its distinctive features are characterized by the market-focused selection of the competencies, appropriated learning instructions, self-paced learning, flexible training method and the completion of training upon the achievement of specified competencies. While there are number of advantages of competency-based training, there are also limitations. If there is no follow-up provisions built in the competency based training, the trainers might slip back to the role of traditional teacher for simplicity.

The competency based training becomes effective only when the process used for identifying competencies is suitable for the market-demanded job skills. It also requires competency based materials and coaching skills among the instructors than simply teaching.

The results of competency based training become effective only when the employers take interest in utilizing performance skills acquired by the trainees. To make this effective, the training providers should familiarize the employers with what skills their potential employees have acquired and how well. The curriculum should reflect these factors during its design.

VI. BROADENING SCOPE FOR EMPLOYMENT

The unemployment rate in Nepal has increased over the years. As the country has no provision of protecting its citizen with social security support, like done in the high-income countries, it has no choice except creating greater employment opportunities for the reduction of unemployment rate. If the transition between eligibility of candidate and employability is longer, it might not only create frustration but also social crimes. To overcome this, the country should attempt to generate increased employment opportunities in all sectors of development to the best possible.

At a low economic growth condition of the country, the unemployed youths might need to depend more on the informal sector employment, which offers low wage. Since the production system of poor economy depends on the application of low level technologies, the workers often need to engage themselves in the manual work considered to be a blue colour job. To change such working structure, the economic condition of the country should develop well. Once the growth of the economy captures upward movement, it can contribute to engage the workers from traditional to a high value-added manufacturing/industrial sector.

The movement of workers from an unorganized labor market to the more organized market structure is often slow. When workers attempt to shift their job from traditional to the off-farm sector, they need to connect themselves more with the formal sector located in the urban areas.

Economic booms are often beneficial for the workers as it helps to increase the demand of labour reducing unemployment rate. If skills of such labour are not developed in line with the market needs, it might discourage capital investors because of low profit margins in the production system. Upgrading skills of the labour force for high quality products becomes necessary at such situation as it can attract higher price in the competitive market too.

Making choice between capital-led investment and labour-led investment is always difficult in a growing economy. If the allocation is more on the capital-led (i.e. profit-led) activities, it would subsequently curtail the scope of social expenditure. Similarly, more allocation for wage-led activities(from social perspective) will limit the scope for economic growth too. Therefore, the strategic dilemma in a growing economy is whether to invest more for profit-inclined economic activities or to promote wage-inclined social benefit. Both aspects deserve respective significance in their judicious terms. However, unlike the labour-led investment, the capital-led investment made below the optimum level can reduce profit margin in the production system. When there is such reduction, it limits the level of saving thus investment.

VII. CONCLUSION AND RECOMMENDATIONS

The success of linking TEVT with employment depends on the stage of economic growth attained by a country. The training for particular trade is organized looking at the scope of employment it can capture. If the trade is associated with the factor-driven stage of growth, it will require technical skills training mostly at the basic level. If the economy is at the investment-driven stage of growth, upgrading the basic level skills would be necessary with advanced training. Likewise, for innovation-driven stage of growth, the technical skills required will be based on contemporary market research.

Given the fact that some productive activities are often ahead than the other (in terms of their affiliation with the stages of economic growth), the training interventions need to be strategic in terms of their technology and production structure relations. In view of this, the economics of training requires selective interventions from both employment perspective of the training graduates and profitability of the enterprise at the same time. In this regard, the challenge of enhancing technical training is to find a win-win situation in capturing the employable market.