Skilling People in Nepal: Reality Vs Dream[1]

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Abstract

Skilling people is channeled through formal, informal or non-formal education systems in Nepal. Formal education includes structured curriculum and mode of delivery where knowledge and skills are acquired in a hierarchical layer. Non-formal education includes the skill development activities in a less structured patterns, whereas imparting knowledge and skills from generation to generation falls under the category of informal mode of education. Similarly, skills development in formal system includes four different types of programs in Nepal. These are short-term training program, professional development program, secondary level technical and vocational education program (including diploma level program) and technical higher education program. This paper opens discussion on these programs, uncovers issues and challenges and suggests some measures for the improvement of program design and implementation.

While preparing the paper, secondary documents are analyzed. In some cases, author's experiences are also used. This article is expected to contribute knowledge to the skill development efforts in Nepal.

Key words: *apprenticeship, employability, skill testing, TVET, world of work.*

Introduction

Skilling people is prioritized in policy documents in Nepal. Almost 16 different ministries of Government of Nepal and its agencies are being involved directly or indirectly in the process of skilling people (Ministry of Education, Science and Technology [MOEST], 2076BSa). After the federalization, the involvement of provincial and local governments in this sector is also increased. In addition, the involvement of

1 *The ideas expressed in this paper do not represent the institutional representation as these are authors' personal opinions.*

non-governmental organizations and donors has also been continuing in this sector for many years. Despite this, the implementation of the programs remained fragmented and always experienced budget deficit and inadequacy.

This paper uncovers the status of skilling people in Nepal, maps out the components of skilling people, issues and challenges, and measures to be taken for betterment in future. Secondary documents are analyzed while developing this paper. It is hoped that this paper will be useful and relevant to those willing to begin or explore more on skilling process in Nepal.

Context

Skilling people has a long history with formal and informal approaches in Nepal. Formal approaches, through public policy and programs since 1951AD, include the interventions from the government together with the donor support channeled through the government mechanism. During this journey so far, interventions range from policy declaration to enactment of acts to the creation of new institutions to the formulation and implementation of new programs. One of the objectives of the education relating to skilling people in the 15th periodic plan is to expand the inclusive and equitable access to quality technical education and vocational skills development (National Planning Commission [NPC], 2020). Likewise, another objective relating to the higher education is making higher education scientific, innovative, research-oriented, technology-friendly and employment-oriented by expanding its access and enhancing quality for the development of knowledge-based society and economy (NPC, 2020). Both the objectives aim to equip people with necessary knowledge and skills that are relevant to the market, both national and international. The plan also includes the strategies and working policies which aim to facilitate the skill development process. In the same manner, *National Education Policy 2076* also includes the objectives of expanding and developing technical vocational education and training, and technical higher education in the country which are similar to the objectives of the 15th periodic plan (MOEST, 2076BSa).

The budget speeches of the Government of Nepal have also continuously highlighted the need for expanding the technical and vocational education and training (TVET), and development of higher education in the country. In FY 2078/79, the government shows its commitment to implement the concept of 70% enrollment of students in technical and vocational education and 30% in general education at the secondary level (Ministry of Finance, 2078BS). In addition to the government's efforts, several activities in support of non-governmental (both national and international) were implemented during the period. However, the available figures on labor force participation and employment are not encouraging (Dhital & Sharma, 2022).

Table 1: Labor Force Participation and Employability

Indicators	NLFS I	NLFS II	NLFS III
The labor force participation rate (15 years and above)	85.8	83.4	38.5
Percentage of currently employed aged 15 years and above	84	81.3	34.0
Time-related underemployment rate, as a percentage of currently active population aged 15	4.1	6.7	4.0
Labor underutilization rate	NA	30	39.3
Percentage of currently unemployed aged 15 years and above	1.8	2.1	11.4
Not in labour force (outside labour force)	NA	NA	61.5
Employment to population ratio (15 years and more)	84.3	81.7	34.2

Note: The results of NLFS I and NLFS II are comparable but NLFS III are not comparable with previous NLFSs due to the change of concepts and definitions.

(Source: Dhital & Sharma, 2022, p. 288)

Defining Skills

The term 'skill' is linked to the ability to do something which certainly comes after some sort of knowhow or knowledge. As per the Cambridge English Dictionary, the term skill refers to the ability to do an activity or job well (dictionary.cambridge.org). Therefore, skill is the ability or capacity of an individual which can be narrated in various ways. TVETipedia Glossary includes several definitions of skills which are relevant to the Nepali context. Some example of the definition retrived from the webpage of UNEVOC UNESCO sources are given below (unevoc.unesco.org):

- *"A bundle of knowledge, attributes and capacities that can be learnt and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning" (Source: Towards on OCED Strategy, OECD, 2011).*
- *"The ability to do in context which is described using learning outcomes (Comment: Influenced by work-based learning: linking of education and training systems with the labour market and employability. Main types of skills include foundation, transferable, technical and vocational)" (Source: Level setting and recognition of learning outcomes: the use of level descriptors in 21st century. UNESCO 2015, Global).*

While defining skills, Armstrong (2010) refers to the Bloom's taxonomy of education which highlights the relationship with the knowledge as below.

The framework elaborated by Bloom and his collaborators consisted of six major categories: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The categories after Knowledge were presented as "skills and abilities," with the understanding that knowledge was the necessary precondition for putting these skills and abilities into practice.

Sometimes, skills are linked to the job and employability. The assumption is that employability is based on the ability to perform a particular physical or mental activity that may be developed or acquired through training or practices. Adams (2011) linked the skills to the employability and earnings because these are closely associated with the market demand.

From these definitions, we can infer that skills are a set attributes that can be developed through planned or unplanned interventions or practices. Human acquired skills from trial and error method in the beginning of their civilization. They learned through observation, imitation, practices and challenges they encountered during their life spans.

In this way, some skills are transferred from the generation to generation in the human history. Later, more structured approaches, both informally and non-formally, are adopted to develop skills. Such approaches are embedded into formal system.

Hence, skill development is a process where learners and workers are systematically provided learning opportunities or qualification for a job or range of jobs (unevoc.unesco.org). In this way, skills are developed or acquired through non-formal or informal or formal mechanisms. These three mechanisms are inter-related. In this paper, skill development only through formal mechanisms is discussed.

Skilling Efforts Through Formal System

In the formal system, skill development efforts in Nepal can be categorized broadly under four major layers (MOEST, 2075BS) which are given below. It means skilling people in Nepal are planned through:

1. Short term training program
2. Professional training program
3. Secondary level or diploma level education program
4. Technical higher education level education program

Under each category, the discussions on the meaning, concepts, existing status, challenges and way forward are discussed in the coming sections.

Skill development through short term training program

Short term vocational training is the provision of providing need-based training in specific skills through non-formal means to the target population so that they can improve their performance in the workplace or improve their living standard with the maximum

utilization of local resources. Similarly, short term training is employment-based training to develop competencies in specific occupations (Sharma, 2005).

The short term training in TVET enhances performance in specific skill gaps and allows trainees to acquire new skills for new occupations that can enable better employment. Several training providers/ institutions implement short term vocational training. In some trades, even polytechnics provide short term training programs in Nepal. Constituent technical schools affiliated with the Council for Technical Education and Vocational Training (CTEVT) also provide short term vocational training (Asian Development Bank [ADB], 2015).

The short term training is implemented in most of the developing countries with an objective to link with the employment and contributes to the quality of life and the national economy (Hartl, 2009). Nepal is also the country that emphasizes short term training to enhance employment. In Nepal, 50,000 youths are trained every year through short courses (CTEVT, 2021). These trainings are implemented by several ministries and their constituent organizations. Likewise, non-governmental organizations are also being involved in such activities but the pertinent question is whether these trainings contributed to the youths for employment and met the demands of the employers. The short term training in Nepal focuses the traditional based occupations, but lags in market demanded occupations like artificial intelligence-driven occupations.

CTEVT, an apex body of TVET has developed 260 short term curricula and 304 national occupational skill standards (CTEVT, 2021). The short term training is designed to meet the skill demanded by the market and employers so that trainees could be linked to employment in a short period. These short term trainings are coordinated by CTEVT and implemented through 676 public training providers and 1,370 affiliated training providers (CTEVT, 2022). These short term trainee's skill test is conducted by National Skill Testing Board (NSTB) which is in operation for almost four decades for both non-formal and informal learners (ADB, 2015; NSTB, 2018). Its responsibility is to conduct skill tests and certify skilled and semi-skilled workers. The skill test will pave the path for the career through the informal and non-formal stream of education and assure the decent employment.

Public and private training providers, affiliated with the CTEVT system, run the short term training programs. But, several non-governmental organizations, registered in District Administration Office or Social Welfare Council, also run such short term training programs. However, they are not included in the number given below.

Table 1: Short term training providers and skill standards

1	Number of Vocational Curriculum	260
2	Number of Skill Standards	304
3	Public Training Providers	676
4	Private Training Providers	1370

Source (CTEVT, 2022)

The above statistics show that private sector affiliated short term training providers are double the public training providers. A huge number of technical training providers (TTPs) have not been registered or affiliated with the CTEVT. The expansion of TTPs is increasing in recent years- the short term training TTPs totaled 1,131 last year (CTEVT, 2020) alone. Although the nation's objective is to provide TVET access to all local levels, these 1999 TTPs are located mainly in the urban areas. The objective of the short term training is to link the training directly with the livelihood of the people and enhance the gainful income (Von Kotze, 2010).

Therefore, the skills acquired through training should directly contribute to the income of people, otherwise the training is worthless. But, the concern here is to what extent the existing training offered by the providers match the actual needs. The quality of the training provided by several training providers is yet another concern. If training may not help participants to develop their skills, it may not contribute to improving the income of the participants. In these cases, the value of the training will be low.

Different 16 ministries are running these types of short courses (MOEST, 2018). Due to the involvement of several governmental and non-governmental agencies in this program, overlapping in program design, duplication of the training, repetition of trainees for different occupations are traced in these short course programs (MOEST, 2076BSb). During the design, it is claimed that these training programs are highly demand-driven, but in actual practice, these are concentrated in supply-driven modes, as these are mainly focused on the traditional occupations. In most cases, there may be poor linkages with the actual needs of the community people. Indigenous skills practiced in the community are almost on the verge of extinction, and the modernization of the existing short term training program is hardly focused. Because of the absence of a common framework, these training programs may vary each other in terms of duration, coverage, implementation modality and scopes.

Skill development through professional courses

Before talking about the professional development course, it is important to explore the meaning of the professional development. An opportunity to learn and apply new knowledge and skills that can help people in their professions, or job or further their career has been becoming important and demanding. It is obvious that continuous learning leads to better performance. Similarly, learning can happen throughout the life span of an individual. As the pace of the technology is rapid in every profession, demand and update in the latest knowledge and skills is becoming mandatory. Such demand can be fulfilled through professional development courses. Antley (2020) defines the professional development as education and learning in a continuous manner in order to be updated in the latest knowledge and skills relevant to the professions or jobs. He further defines the professional development

in the following manner: "Professional development refers to continuing education and career training after a person has entered the workforce in order to help him/her develop new skills, stay up-to-date on current trends, and advance career" (para. 3).

In this manner, any sort of education, training or program that aims to support anyone willing to develop some knowledge and skills relevant to his/her profession or job can be kept under the professional development course. This is taken as ongoing process of developing, maintaining and documenting the professional skills (www.skillsyouneed.com). A person can acquire such skills formally through the courses or training or informally through practicing or job placements or observing others. This course is often named as continuing professional development.

By nature, professional courses are aimed at enhancing the professional capacities and competencies of an individual but the scope, coverage, duration and implementation modality may vary each other. The course may depend upon the interest of the participants and nature of the skills required to the market. These courses are mostly non-credited and can be run by academic institution and private companies as a modular program. Mostly, professional organizations offer such professional development courses.

The professional courses help to add "modern skills" (www.teachhub.com) components within an individual that may range from basic to the higher level skills. The debate on such modern skills is focused on the 21st century skills. In this regard, the 21 lessons outlined by Yuval Noha Harari in his book *21 Lessons for 21st Century* (Harari, 2018) are also worth for enhancing the skills required for the 21st century.

At present, most of the professional programs are managed by the private sectors in Nepal. The companies working in the education and training related professions offer professional development courses of varying nature and attributes. However, there are some professional courses under CTEVT, aiming at developing skills for those who are already in jobs or searching for jobs. The professional courses conducted by CTEVT are of 1,696 hrs. which consist of 164 hrs basic module, 956 hrs. professional module and 576 hrs. On the Job Training (OJT). There are 13 professional courses, which are Professional Welder, Professional Vehicle Body Repair Technician, Professional Plumber, Professional Motorcycle Mechanics, Professional Mason, Professional Light Vehicle Mechanic, Professional LCD, LED TV Repair Technician, Professional Cook, Professional Carpenter, Professional Building Electrician, Professional Aluminum Fabricator, Professional Telecom Technician and Professional Computer Hardware And Network Technician (CTEVT, 2022). In the context of Nepal, such courses are limited in number and some of the courses are highly valued. They are becoming competitive and constantly changing (Trevor, 2020). Institutions offering professional courses usually provide certificates to the graduates of the programs.

Skill development through secondary education (including diploma level program)

Because of the universalization of basic education and improving the transition rates from basic to secondary education, the enrolment in secondary education has increased in recent years. This is becoming like a massification of secondary education as mentioned by Pavlova and Maclean (2013). Secondary education in Nepal includes three streams, these are general, technical vocational and traditional (Curriculum Development Center, 2076BS). In this way, Secondary education in Nepal has two purposes, first, preparing students for the higher education, and second, equipping graduates with the relevant skills and competencies that allow them to enter into the world of work. The aims of these programs are to equip secondary level age group students and make them able to contribute to the economy by utilizing their skills and competencies as middle level skillful people. In this way, secondary education helps to prepare the middle level work force where general secondary education helps to equip students with the foundational skills. Similarly, technical secondary education contributes directly to enhance the technical skills.

Technical secondary education consists of three different programs which are given below:

1. Pre-diploma including apprenticeship
2. Grade 9-12 program
3. Diploma level program (after grade 10)

Pre-diploma (TSLC program)

The aim of the TSLC program is to produce basic and middle level competent human resource required for the country and the world (CTEVT, 2022). At present, the list of Pre-diploma (TSLC) programs providers (public and private) is as follows:

Table 2: Pre-diploma (TSLC) programs by public and private institutions

SN	Programs	Providers	
		Public	Private
1	Engineering	141	117
2	Hospitality	2	3
3	Agriculture	244	63
4	Health*	5	147
4	Others	3	14
	Total	**395**	**344**

*The health program in pre diploma has been phased out.

Source (CTEVT, 2021)

The gap is being observed in capacity to enroll students and actual intake. However, in-depth analyses are yet to be carried. Capacity in terms of enrolment and existing intake are given below: The statistics shows the intake is in the decreasing trend as compare to the enrollment capacity. This brings the picture for the discourse that having the demand of these technical human resource in the market but the trainees are least interested to pursue to enroll in the pre-diploma course. Therefore this gap needs to consider while implementing the policy.

Table 3: Enrolment capacity and intake

SN	Programs	Enrolment Capacity	Annual Intake
1	Engineering	13191	5213
2	Health	9390	0
3	Hospitality	250	79
4	Agriculture	14484	4871
5	Others	670	153
	Total	**37985**	**10316**

Source: (CTEVT, 2022)

The pass percentage of the last three years shows that pass rate is in between 77% to 81%. The pass rate of the pre-diploma should be higher than this as its composition of the curriculum is 20% : 80% of theory and practical with the OJT. Pass percentage of three educational years are as follows:

Table 4: Pass percentage of three educational year in pre-diploma level

Academic Year	Registration	Graduation	Pass (%)
2073/74	24167	19728	82
2074/75	24268	18607	77
2075/76	27967	22519	81

Source (CTEVT, 2021)

Two arguments revolve around this program which often contradicts each other. First, some argue that such program should be phased out or upgraded in equivalent to the diploma level program in order to meet the middle level human resource requirement of the country. For example, *Rastriya Chikista Shiksha Ain [National Medical Education Act] 2075* clearly includes the provision of either phase out or upgrade of the health related pre-diploma program (www.lawcommission.gov.np).

Second, the existing programs are relevant to the country; therefore they should be run in

as of it. For example, the graduates of this program are working in health posts located in remote parts of the country. The graduates are working as the backbone of the basic health (and other sectors too) services system of the country. The report published by the Ministry of Health and Population (MoHP) on *National Strategy of Health Workers in Nepal* highlighted the existing midwife and Auxiliary Nurse Midwife worker are 18632 and projected the requirement of these worker will be 64764 by 2025 and projection for the 2030 will be 81360, which indicates that by 2030 the requirement of such workers are 4 times then at present (MOHP, 2021). But the question is government has phased out the production of these human resources. There is no institutions which offer PCL miewife program, so discourse is how nation meets the demand of the market.

The available statistics show that these programs are limited in number and beyond the reach of many young people and rural parts of the country. In order to accommodate the large share of those with basic education, there is a need of massive expansion of the providers in the rural regions. The target groups of this program are those young people (after age of 13) who do not continue their education (especially secondary education) because of family's financial and other personal matters. The majority of providers fall under the category of private which charges fees from students. The total share of enrollment of the pre diploma by the private organization is 19834 out of 37985 which is 52.22% of the total enrollment (CTEVT, 2022). Such direct cost associated to the program made difficult for the poor family to pay fees. In addition, other logistics as indirect costs also became burden to such families. Hence, despite being a useful program it is limited in number.

Grade 9-12 program

Secondary education in Nepal is four to five year program for the age group of 13-17 years, depending upon the general secondary, and technical and vocational education. This program includes general education program, technical vocational education program, Sanskrit education program and some religious streams. Secondary education prepares students for both higher education or for the world of work. Of them, Grade 9-12 technical vocational education is one. This program only includes five different disciplines as civil engineering, computer engineering, mechanical engineering, agriculture and Veterinary science.

Till now, 484 public secondary schools run these programs covering altogether 425 local levels of the total 753 local levels (cehrd.gov.np). These programs are running only in public schools and do not charge fees from the students.

The total number of schools by discipline, enrollment capacity and pass percentages are as follows:

The capacity in terms of enrolment and existing intake are,

Table 5: Number of Schools by Discipline and Enrolment capacity

SN	Programs	Number of Schools	Enrolment Capacity
1	Civil Engineering	129	24768
2	Electrical Engineering	35	6720
3	Computer Engineering	100	19200
4	Plant Science	178	34176
5	Animal Science	42	8064
6	Music Education	1	192

(Source: cehrd.gov.np)

In terms of pass percentage of grade 9-12 programs, the data received from National Examination Board looks as below;

Table 6: Pass percentage of 9-12 program

SN	Year	Number of Students	Pass percentage
1	2074	2575	18.52
2	2075	1941	11.43
3	2076	1859	7.20
4	2077	4969	23.52
5	2078	5749	72.39

In letter grading system those students who are eligible for transcript are considered as pass for this calculation purpose.

The relevance and effectiveness of the programs are yet to be assessed. However, argument is that the graduates of the program are willing to go for further study and are less attracted or motivated to go to the work. This may be either because of the unavailability of the jobs in the market or mismatch in the selection of students for the program. Those, who can afford higher education as a continuous manner after completing secondary education, do not need to go to the technical vocational education. Such students get enrolment in general secondary education and after its completion, they can join higher education.

Schools with this program do not have adequate lab and equipment. The ample of the practical work needed to accomplish this program is weak which makes the enhancement of the skill on graduates are not as demanded by the employers. The availability of the qualified teachers is another concern. Even the support mechanism and monitoring are also not so robust, thereby affecting the implementation of the program. However, the objective of the program is to expand the coverage of the program in the remote parts of the country, thereby increasing accessibility of the targeted groups. Still, the industry-institute linkage is elusive.

Diploma level program

This program is secondary level equivalent program governed by the CTEVT. It has been running in four different types of institution. First, CTEVT's constituent technical schools and polytechnic are the public institutions where programs under different disciplines are being run. Second, private company also offers diploma level program. The programs

in these institutions are managed from the student fees.

Third, public secondary schools also offer diploma level programs. Till now 472 schools run diploma level programs (named as TECS) covering 321 local levels out of 753 local levels; such public schools are simply the venue of the program and increase the number of TECS school (CTEVT, 2022).

Fourth is CTEVT is running 42 partnership modality schools.

Though quality, relevance, education and employment linkage is missing, they still receive token support from the government (CTEVT, 2021). Many schools run their program from student fees. Private companies also run diploma level programs. There are altogether 429 affiliated (private) schools that run diploma program in health, engineering, agriculture, hospitality and hotel management. The total share of enrollment of the diploma by the private providers is 14758 out of 45584 which is 32.03% of the total enrollment (CTEVT, 2022). Therefore, these institutions charge fees under the concept of the cost recovery principle.

The number of programs, enrolment and pass rate are as follows:

Table 7: Diploma level by public and private institutes

SN	Programs	Providers	
		Public	Private
1	Engineering	34	103
2	Health	174	37
3	Hospitality		15
4	Agriculture	7	62
5	Forestry	2	24
6	Others	1	13
	Total	**218**	**254**

Source: (CTEVT, 2021)

The capacity in terms of enrolment and existing intake are given below:

Table 8: Enrolment capacity and intake

SN	Programs	Enrolment Capacity	Annual Intake
1	Engineering	19002	8655
2	Health	13662	11212
3	Hospitality	520	118
4	Agriculture	10440	5130
5	Forestry	1880	864
6	Others	80	8
	Total	**45,584**	**25,987**

Source (CTEVT, 2021)

Pass percentage by programs are as follows:

Table 9: Pass percentage of three fiscal year in diploma level

Academic Year	Registration	Graduation	Pass (%)
2073/74	18067	9945	55
2074/75	24279	11550	48
2075/76	26122	14420	55

Source (CTEVT, 2021)

The graduates of these diploma programs enter into the market as they are expected to possess relevant skills for the market. However, mismatch between the market demand and supply visibly appeared in the surface. As a result of the low investment in education and little priority to practices, diploma level programs are limited in few places- mostly concentrated in urban areas. The schools which are located in rural setting do not have adequate lab facilities, equipment, qualified teachers and support mechanism.

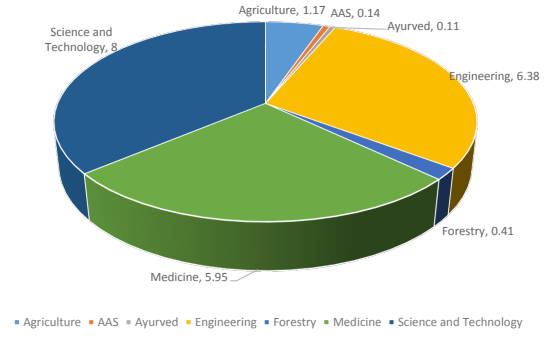
Diploma level programs are for those students who cannot continue their higher education because of the financial constraints facing the families. Such programs should largely be based on the involvement of students in practical work- either in workshop or field or in a company. In some cases, schools used more theoretical discussion in teaching and learning rather than engaging students in practical sessions. This might be because of unavailability of relevant lab facilities, equipment, teachers' attitude and motivation. The absence of monitoring and follow up also contributed to school's non-performing in practical session. In a few cases, no differences are observed in the teaching and learning of general and technical vocational schools.

Skill development through technical higher education

The aim of the technical higher education is to produce graduates with higher level skills and competences in the areas of science and technology, information technology and technologies. As one of the branches of the higher education, technical higher education is being managed by the higher education institutions, especially by the universities and academics.

Currently, technical higher education includes the disciplines of engineering, medicine, agriculture, forestry, health profession, information technology etc. University Grants Commission ([UGC, 2019/20) provides the composition of student enrollment in different disciplines of the higher education. The report further states: The enrollment proportion in terms of the field of the education is 77.83 percent of the total enrollment (466,828 students) in general program and 22.17 percent in technical program. This share is further disaggregated this way:

Chart 1: Share of students in different disciplines of technical higher education (total students 4668282)



(Source: UGC 2019/20)

Both skills and knowledge are considered the driving forces of the economic growth the social development (Sachan, 2017). Such skills and knowledge can be provided with the provision of higher education, especially higher technical education in the country. But the above situation indicates that the situation of higher technical education is limited in number, their coverage and capacity. In order to equip students with market and life skills, relevant skills, the focus should be given in skill development activities from early schooling to the higher education.

Concerns and Roadmap Ahead

What proportion of students should go to the technical and vocational secondary education after completing basic education (grade 8)? Likewise, what proportion should go to the technical higher education? Pavlova and Maclean (2013) mentioned about the participation of students in pre-vocational or vocational programs from the developed countries as follows:

In most OECD countries with dual system apprenticeship programs (Austria, German, Luxemburg, Netherland and Switzerland) and in Australia, Belgium, The Czech Republic, Finland, Italy, Norway and Slovenia, 55% or more of upper secondary students are enrolled in pre-vocational or vocational programs. However, countries like Canada …. Japan, Korea ……., the United Kingdom……. Israel, 60% or more of upper secondary students are enrolled in general programs even though vocational programs are offered.

In case of Nepal, about less than 2% of the students of secondary enrollment are enrolled in technical vocational education program. In order to accommodate 50% of the secondary level enrollment, more than 7,000 public schools should run such program with full capacity of intake. For this, a huge investment is required to run the program in 7,000 plus public schools. In addition, a large number of teaching and non-teaching personnel is required.

The technical and vocational education is costlier than the general education. The concern is how we afford the cost of massive expansion of technical vocation education in secondary level. Patrinos and Psacharopolous (2020) argued that the vocational education costs about twice that of the general education whereas the graduates of general and vocation education have more-or-less equal earnings. From the above situation, we came to know that technical vocational education is more expensive as compared to the general education because

of factors such as smaller classes and the cost of tools and equipment and consumable learning materials supplies as discussed by Pavlova and Maclean (2013). It indicates that general secondary education is more profitable than vocational education in terms of the rate of return. In some cases, the costs of the vocational education programs grossly exceed the benefits.

The cost to provide skill training to large number of youth and adults is another concern of skilling people in Nepal. Similarly, the expansion and development of technical higher education is costlier than the costs associated in above programs.

The concern at this point of time is how we can afford the costs of expanding skill development in Nepal. Are we able to manage such costs? For this, long term plan is necessary. Huge costs are required from public funding for the expansion of skill development in Nepal as the fund should go from the public sources.

Similarly, adequate attention is required for the design and implementation of skill development program in an integrated manner. The restructuring of the existing program and institution is necessary. The question is how and who can do it. Skills are developed by engaging participants in works or jobs, or practice. In order to do so, combination of both theoretical and practical components is required in the curriculum. Even more important is to apply the practical component in the actual practice. Do we have patience and passion to accomplish all these? If not, the outputs may not be salable in the market. Once the participants do not practice in real world setting, the skills and competencies are not embedded with him or her. Engaging students in practices as demanded by the curriculum, teachers' dedication and motivation matters are must.

Teachers/instructors, head teachers/principals and schools must be made accountable for enhancing skills in students and effective teacher support system must be in practices which consists of refresher training to teachers, exposure to the industry, logistics to carry out the required activities, and discussion with supervisor, experts etc. The expansion of skill development activities from level 1 to the higher technical education given above are entirely running in the absence of proper planning, mapping and demand analysis. Skill development programs should be developed and implemented in such a manner where nobody can raise a question about the use of scarce resources. All these should be done with proper analysis and rationale. Hence, the integrated policy framework is required that guide and coordinate the skill development activities.

The annual intake in secondary level TVET program does not seem as per the capacity and the pass percentage in this level is also weak. The result does not provide the encouraging scenario in technical higher education as well. All these indicate the low efficiency and low quality of the program to some extent. The measures to improve the situation should also be kept in high priority. The discussion on TVET fund and the

measures alike do not address the concern of integrated skill development framework. The linkage between the diploma and Grade 9-12 program with the higher technical education must be explored and implemented so that they provide the measures to utilize the existing resources i.e. laboratory, human resources and equipment.

The secondary level education program must be considered as a feeder program of the higher technical education program. For this, technical higher education program should be revisited to make them relevant to the human resource requirements of the national development rather than focusing only on single disciplined technical higher education. In order to address the shortage of qualified instructors/teachers and teaching and non-teaching staff in skill development program, measures to utilize the existing human resources and graduates as interns should be explored. Lab facilities can also be shared so that it may minimize the costs to some extent. Linkages between different programs must be established. The existing secondary level program must be clustered under the jurisdiction of the existing higher technical education institutions. The academic supervision should be kept within the responsibility of these institutions which can train feeder school teachers, provide academic guidance, monitor the performance and suggest measures for improvement. The existing programs, status of lab, equipment and human resources, support mechanism and linkages with market and industries must be reviewed and taken concrete steps for their improvement. Time bound action plan is needed to upgrade them with necessary resources. Moreover, an investment plan must be put in practice.

There is a need for expanding the coverage and reach of the program which must be based on the need, fulfillment of the standard and requirement. In some place, more support might be needed.

The incentives to students of secondary level technical vocation education and technical higher education program are required. Support should be designed in such a way that should cover both the direct and indirect cost of education. In order to make program responsive and accessible to the targeted group only tuition fee waiving may not be adequate as they need support for indirect cost as well. The scholarships for the meritorious students can be the schemes to attract bright students. And, there must be a mechanism of linking school with the industry and market. Pavlova and Maclean (2013) discussed about the rate of return on investment in vocational education which largely depend upon the stage of development of a country. They suggested that in low income countries primary education is the best investment, the expansion of secondary education may give high social return for middle income countries and return may be greatest in higher education in high income countries. So this should be considered while making decisions on investment across the different sub sections of education. During this process, demand driven approaches to vocationalization must be linked with the

stage economic development that may yield the high return from the public investment.

Conclusion

Because of the universalization of compulsary and free basic education and improved efficiency of basic education system, more students enter into secondary education, thus making a move towards the massification of the secondary education. As nation is looking to increase the ratio of TVET participation in the secondary education to make the dream reality quality TVET education, education employment linkage at local level, industry experienced instructors and path for the further career needs to be assured. Likewise to contribute in the nation's economy number of the Efforts of skilling people in Nepal are implemented from various ways for many years. However, inadequate access, low quality and relevance, limited participation, and fragmentation in the design and implementation are some of the issues which are being observed in most of the cases. For improving the situation, investment in education, especially in skill development programs, should be increased together with the development and implementation of integrated framework in the skill development efforts. Before putting these interventions in practice, urgent actions for the mapping of the existing provisions and upgrading their situations are necessary.

Massive efforts for the pre-vocationalization of basic education and vocationalization of secondary education in line with the social, economic and technology rationales are imperative. This will help to produce the quality graduates who can engage themselves in self-employment or in job market. Such skill development efforts must be linked with the economic and social development policy. So, skill development does not work in isolation, rather it is directly linked with the economic development of the country and cultural traditions. More holistic approach is useful for skilling people in Nepal rather than compartmentalization into different components or programs which will assure the dream of making nation prosperous through the TVET.

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