

# **An Overview of Technical, Vocational Education and Training (TVET) in the Context of Federalism in Nepal.**

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## **Abstract.**

Technical and Vocational Education has become a subject of discussion among the stakeholders in Nepal. Though TVET had been introduced for a considerable length of time, it has not been instituted and developed to meet the needs of the evolving context. The mandate of handling the TVET sector up to the secondary level has been entrusted to the local government institutions according to the federal constitution of Nepal but central authorities seem not prepared to loosen their grip on it. This has given rise to several confusions and ambiguities in both in the policy and operational realm. Roughly 384 community based technical schools are running in the country to date. At the same time, TECS has attempted to promote and establish technical wing in the community schools from the center. This has presented problems as it goes against the provision envisaged in the federal constitution of Nepal. What is most confusing being the fact that the Diploma level technical courses are also being distributed at the local level by the central authority? For example, Diploma in Civil engineering is an instance for which affiliation is largely distributed by CTEVT from the center across the country. Thus CTEVT has been running 45 constituents and 875 affiliated technical institutes. Likewise, Secondary School Department of MoE also has 384 technical wings in community schools. It seems that there is a competition to distribute affiliation between Secondary Department and CTEVT from the centre. There are many Issues of duplication and overlapping which has hindered the process for producing competent, dedicated, skilled human resources required to the development of the country. Needless to say, an equipped, technical teacher training institute is not in place which should have been established and developed to provide

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training to the technical teachers at the local level. There is also a need to make LGIs capable and competent to undertake their responsibility entrusted to them by the constitution, so that they could be enabled to promote TVET at the local level. Distributing Technical wings from the center should be halted. Rather the local governments should be encouraged to develop a full-fledged technical institutes at the local level, Regulating, managing and, financing for development of the technical wings should be the responsibility of LGIS. The idea of public-private partnership, could be conceptualized and implemented so that local stakeholders such as entrepreneurs, business people may come to collaborate and invest to develop the local technical institute to respond to the local needs and demands.

**Key words:** Federalism, Technical and Vocational Education, Constitution, Cost sharing.

## **1. General Introduction**

Nepal is in a unique geographical location lying between China and India; the South, East, West border is shared with India and North with China. Nepal and India share an open border; people of both the country have enjoyed free movement. They are doing business, and working in one another's country since long. Nepal's area is 147,181 square kilometers and the country is elongated in a rectangular shape from East to West within 26°22' and 30°27' North as latitude and 84°12' and 88°12' East as longitude and geographically it is divided into Himalaya, Hilly and Terai region. 'The population of Nepal 26,494,504; male 12,849,041 and female 13,645,463 with 1.35 annual growth calculated during the time of census analysis and the literacy rate five years and above counted 65.9 percent in June 2011' (CBS, 2011).

### **1.1. Educational Achievement**

SLC equivalent educated people in the country are 16,361,59 (Sixteen lakhs thirty-six thousand one hundred fifty-nine). These are the labor force of Nepal, every year almost 5 lakhs are added in the market. These should be ready to take up jobs. The education system should be designed to make them employable. In total 16,098,519 (sixteen million ninety-eight thousand five hundred and nineteen) are literate in Nepal (MOEST, 2017).

## **1.2. Problem Statement.**

Without a proper educational system and technically competent human capital development remains stagnant. Transformation becomes a distant future, people's frustration increases; it hampers development. Technical and Vocational education has not been taking shape as per the need of the society. Nepalese society is rapidly changing and shifting from rural to urban, urbanization has been taking place haphazardly, and planned towns are none in existence. The community schools are becoming the forefront in implementing technical education, whether these will fill the gap of skilled, competent human resource required in the country, still, human resource needs to the country has not been studied in detail. Even the need assessment has not carried out before handout of 752 LGIs 384 community school have technical education. Technically trained trainers/teachers are lacking in the country, in reality, there are none. The environment plays a vital role in learning technical and vocational education. Technical training and investment are very low whereas it drives the country to be self-reliant.

## **1.3. Purpose of the study.**

The main purpose of the study is to identify the real state of technical education that is implemented by the community school of Nepal. The study examines the technical education scenario with its historical perspective before and after the establishment of CTEVT. It will also examine the situation of NESPs. The study will, identify the lesson learned from this program to examine the situation of recognition of prior learning and finding on competency-based education, right now NVQS is restructuring it on the foundation of NSTB. Identify the role of federal government on technical, vocational education and training.

## **1.3. Methodology.**

The study is based on the secondary source of literature and data. The published literature would be from the national level, reports, constitution, acts, reports of educational commissions, and the publications of the CTEVT, Secondary Department of the ministry of education, and secondary data will be used if they are related to TVET sector of Nepal.

#### 1.4. Limitations of the study.

Since the study based on secondary publications and data; these may not be found enough or may not have studied and published the required data. Despite these limitations, the study will be carried out based on the published literatures and data. It will help to realize the basic situation in the field of technical and vocational education especially in the school-based technical and vocational education implemented in 9-12 classes but they have to pass SEE to pursue high school for 11 and 12. Already there is a mismatch in the policy level, they do not have a clear demarcation in between technical wing of secondary education and technical education for professional personnel capable to handle the technical problems with an alternative approach to lead the innovations. This has been the backbone of the 21st century's economic development

#### 2.General Introduction of Federal Structure of Nepal.

Nepal entered in federal system after promulgating a new constitution in 2015 A.D, and the administrative division was restructured as per the constitution to shares power between local bodies, province, and central government. With this federal system of governance, the local bodies have substantial power to execute their' local level needs and development. The table below shows the federal structure of Nepal.

**Table 1. Local Governments.**

S.N.	Administrative division	Nos.
1	Province	7
2	District	77
3	Metropolitan city	6
4	Sub-metropolitan city	11
4	Municipality	276
5	Rural Municipality	460

'The local level representative 35041 were elected from the people for newly formed local governments, these are comprised of the rural municipality, metropolitan cities, and municipalities which have local legislative power' (Australian Aid and Asian Foundation , 2017).

**2.1. Rationale of federal structure in the context of education.** Almost twenty-eight countries in the world have adopted a federal system. Since it has given horizontal and vertical balance in governance and promotes development, a debate on centralization and decentralization is ongoing. In this context the core objective of the federal system is to promote accountability, standards without hampering the regional and local need and preferences. It also balances the diverse interest of the national, regional, and local community' (Kenneth K. Wong, Felix Knüpling, Mario Kölling and Diana Chebenova, 2018).

In the federal system of education, innovation practices take place in small areas; it will give the pros and cons of the system without much investment. So the educational system that is relevant to the local level to the national level could be reformed. It also addresses the local need and promotes local technology with close observation. It also creates competition in quality production, revenue generation, and investment; in this limelight, Nepal opts for federalism, which bestowed accountability with the responsibility to LGs on education basically on primary, secondary, and technical education up to diploma level.

## **2.2. Historical Background of Technical Education.**

Nepal has a long history of civilization, more visible since the time of Buddha, Tilaurakot, and its excavation proved the bricks and construction were for the past 3000 years and civilization of city establishment in a different part of the country. The technical know-how in the construction sector was far and wide in Nepal, Arniko and his team had successfully constructed magnificent temples and houses in China and was highly honored' (Rijal, 2018).

These skills being acquired through the apprentice model of learning, not in the particular training centers but it is assumed some may have it in Kathmandu, Bhaktapur, and Lalitpur, but the facts are not found yet.

'Rana Prime minister Bir Shamser organized a workshop to discuss what type of education will require to Nepal, he emphasized the need for Technical and Vocational education required to Nepal. So he sent his son Mahendra Shamser to Japan to study Technical Education. After Birshamser, Dev Shamser also conducted a debate on what sort of education was required to Nepal, after a long time of discussion and debate concluded that the education should be as per the need of the country and to realize this view Bajhang King Jay Prithvi Bahadur Singh was appointed' (Commission, 2018).

Nepal opened its door for education to the people after 1951; before this, the education was only for the ruling classes particularly for Rana families and some other feudal their children also sent to study abroad. 'The literacy rate was only 5 %, less than 1% of the population has access to education, 'there were 310 primary schools, 11 high schools, colleges 2 and religious schools were 40 ( Buddhist and Muslims- these were roughly estimated)' (Aryal, 1970).

The country did not have any university at that time, Mohan Shamser talked about the university but it did not materialize. After Overthrown the Rana regime in 2007, people started to open schools all over Nepal, even though the democratic government was entangled in other issues. Nepal Education Planning Commission was constituted in 2011 BS and studied the educational situation of Nepal and produced a historical document of its kind named 'Education in Nepal-2011. 'It was found that there was a very high level of construction work during the period of Lichhavi' (EPC, 2011-BS). It proved an apprentice model of technical education and was flourished in Nepal. It was also praised by the travelers. 'During the period, the people were demanded Industrial Schools' (EPC, 2011-BS).

During the Rana regime, there was also the influence of Gandhi and started base schools in 1947. 'The base schools started teaching vocational subjects such as agriculture, construction, weaving, tailoring, and handicrafts. Rana regime was overthrown by the armed struggle of the people in 1950 for the establishment of democracy in the country during the period of transition; base schools were discontinued but in 1952 multipurpose high schools were established to impart vocational skills to the youth to establish such schools in each district but it failed since the management of the schools lacked the willpower to run the schools in cost-sharing basis and lack the skills to meet the demand of the community as well' (Gaihre, 2019).

After the coup of democratic government in the 2017 BS, the Panchayat regime was established by King Mahendra and introduced the unitary system of governance, named Panchayat. Education was slowly introduced in the country to establish Panchayat regime which was a dictatorial system of governance, it has not done much up to 2028 BS in Education, the old established schools were let run and other schools were slowly opened in the leadership of Panchas, other political parties were banned in the country. The principle of the education was 'To further consolidate and strengthen faith in and loyalty to the Crown and the country by harmonizing different economic and social interests'



(NESP, 2028- BS). Those who oppose the Panchayat regime were brutally controlled, jailed even killed.

Vocational Education in Schools was introduced during the period of NESP (1971-76) and the prevocational education was introduced in middle School, it was grade 4 -7 and Vocational education was introduced with the priority in teaching hrs per week 20 and full marks of 200, the following were the vocational education, it was encouraged one or two subjects to implement in the Schools as per the need of the community; these subjects were Agronomy, Animal husbandry and Dairy Industry, Horticulture, Poultry, Fisheries, Tourism and Hotel Management, Handy Crafts and Wood Crafts, Ceramics and Pottery, Metal Work, Clothing, tailoring and Knitting, Tanning and Leather Work, Masonry, Brick building and Architecture, forestry, Auto Mechanics, Bee- culture, Music and Dance, Short and typing, Drawing and Photography, Radio Mechanics, Nursing, Health workers, Printing Trade Technology, Electrical Installation, Watch and Clock Repair, Plumbing, Furniture and Cabinet Making, Industrial Design and Commercial Art, Stationary Making, Food technology and catering, Textile Technology, Office Management, Accounting, Cane and Bamboo works and Mountaineering. It was also emphasized to impart practical skills while teaching the subject (NESP, 2028- BS).

All together 34 vocational subjects were listed to implement in the school system. 'Schools were also classified as general and vocational; in general schools, 20 % of the vocational subject were introduced were like 30 to 40% in vocational high schools. (NESP, 2028- BS).

CTEVT established in 1989 intending to produce technically sound mid-level human capital for the development of the country; in this light, it has introduced 3 years of Diploma programs but the aspiration of the students started looking for a higher career perspective which as the general instinct of humankind, the gap of the skilled human resource remained almost the same. The Authoritarian Panchyat system was in the driving seat and the political parties were banned from working underground, it leads a mass movement, it overthrown the regime in 1990 and monarchism came under the constitution and restored democracy after 30 years.

**2.2.1. Technical Education after 1990.** The democratic government did not do much on the education front despite accelerated to open private schools and colleges; CTEVT became an affiliation providing institute and started to expand in the schools under the program of TECS (Technical Education in Community Schools); the expansion has been

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continuing to the date 397 community schools are with TSLC program in the modality of CTEVT.

**2.3. General Overview of Educational system of Nepal :** An apex body of education is the Ministry of education; established in 1951, Now it is named as Ministry of Education, Science and Technology (MoEST) with the responsibility of developing policies, programs, plans,

implementing and management of overall development of education, science, and technology of the country (MoEST, 2018). The ministry has been providing policy-level guidance for Technical and Vocational Education. CTEVT, the semi-autonomous body of the ministry has been conducting technical and vocational education in the country with

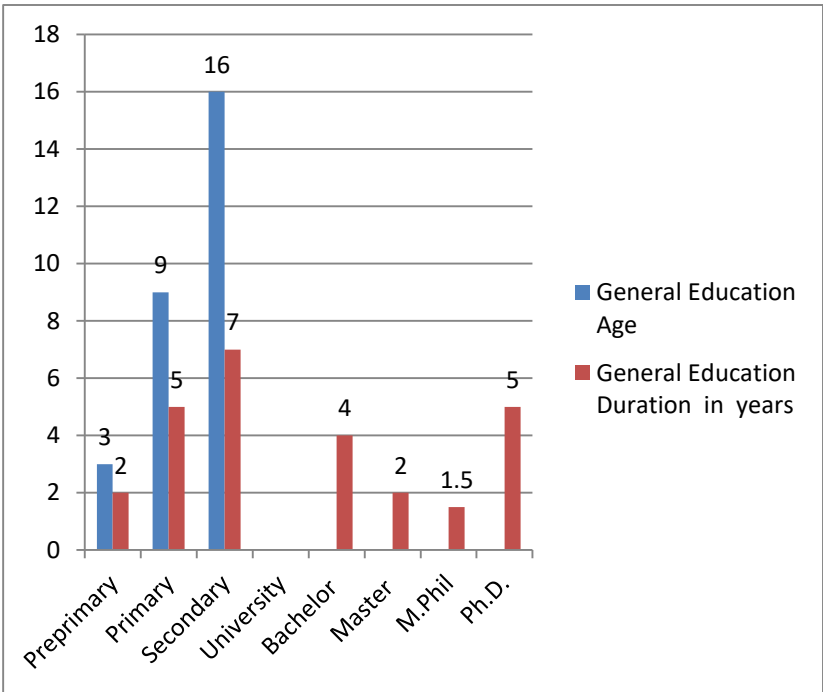


Figure 1 Educational System of Nepal

the authority of affiliation to private institutes. School Education is 12 years, bachelor 4 years, master 2 years, M. Phil. 18 months, and Ph.D. 3 to 7 years. A higher level of education has been conducting by universities, including Engineering and Medical science. There are 13 universities in the country some more are in the pipelines to establish by the provincial governments. Gandaki Province is envisioning a technical university; it has also acquired land to establish.

### 2.4. Technical Education and Vocational Training.

Technical education was introduced from grade nine onwards in the school system. There is a National level of examination called SEE, it has a grading system, as per their grade they are allowed to choose the faculty in the 11 and 12 grades, but in the technical wing, they are allowed to have it from grade -9.



### 2.4.1. Diploma level of Technical Education.

CTEVT has 3 years course structure after SEE; it has a national level entrance exam to enter the technical wing, including health, nursing, and agriculture. It has the authority to provide affiliation to private institutions to conduct technical courses. It has also owned 22 technical institutes located strategically considering the easy access to the people in technical education. It has also established a department known as TECS to provide affiliation to community schools.

#### **Institutes running under the umbrella of CTEVT.<sup>iii</sup>**

Table 2. Institute under CTEVT.

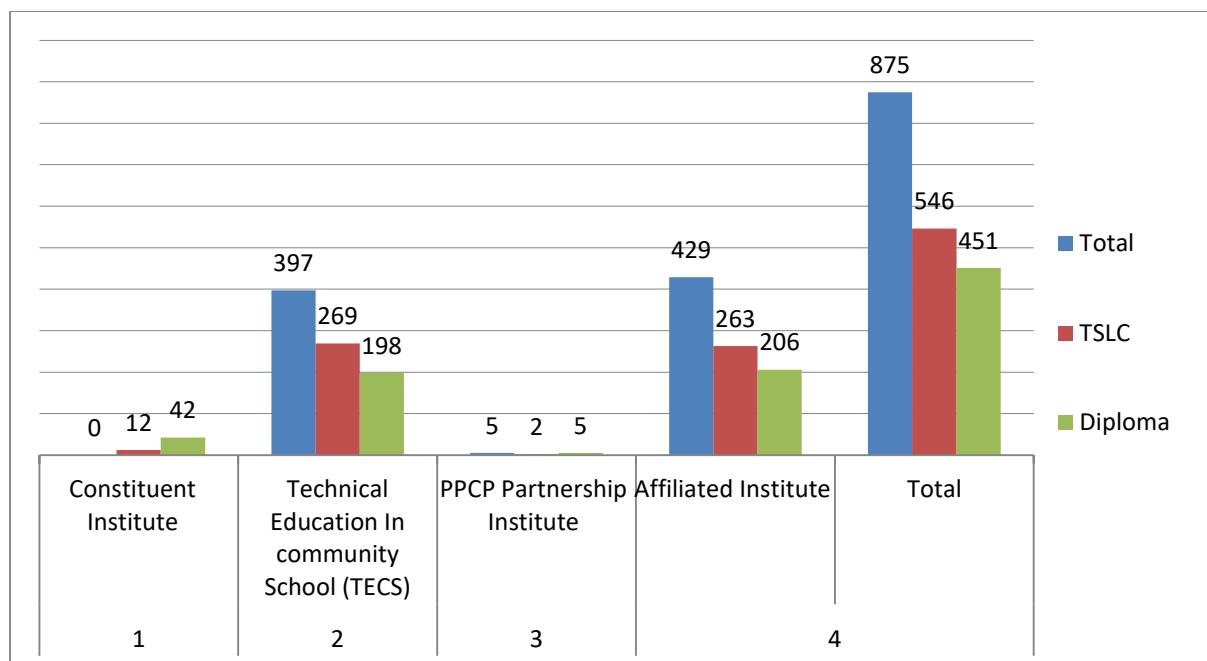
Type of Institute	Total	TSLC	Diploma
1 Constituent Institute	45*	12	42
2 Technical Education In community School (TECS)	397	269	198
3 PPCP Partnership Institute	5	2	5
4 Affiliated Institute	429	263	206
Total	875	546	451

Note: \* Since some institutions run both TSLC and Diploma program, total figure is lower than the addition of corresponding figures of diploma and TSLC Program.

CTEVT has been running 45 Institutes as its establishment, others are in community schools - 397, Partnership Institutes- 5, Affiliated Institute 429, altogether 875 technical institutes are running in the country.

This is the indication that the technical institutes are distributed mostly to the private sector.

<sup>iii</sup> The table 2- is from COMPREHENSIVE TVET ANNUAL REPORT 2075, Ministry of Education, Science and Technology Singh Durbar Kathmandu Nepal.



**Figure 2. Technical Education in Chart.**

TSLC, it is 18 months course after SEE / SLC regarded as sub overseer level and Diploma requires 3 years of study after SLC/ SEE, they are known as overseer. These institutes are producing mid-level technical human resource to handle supervisory work as an assistant. The same level of the course is CMA and HA. CMA is as TSLC and H.A. is known as a health assistant. Likewise, they are also producing a staff nurse, which is also 3 years of study after SLC/SEE.

All these institutes are controlled by CTEVT and compelled to run their courses, which are not made after market need assessment and envisioned for preparing skilled, knowledgeable human capital to the incoming market need.

**2.4.2. School Level Technical education.**<sup>iv</sup> School level technical education has been conducting in the community schools from grade 9, the duration is 4 years of study, the curriculum formation and controlling examination carried out by the ministry of education, Secondary School Examination Board. The table below indicates the technical education in community schools affiliated with the Secondary Examination Board.

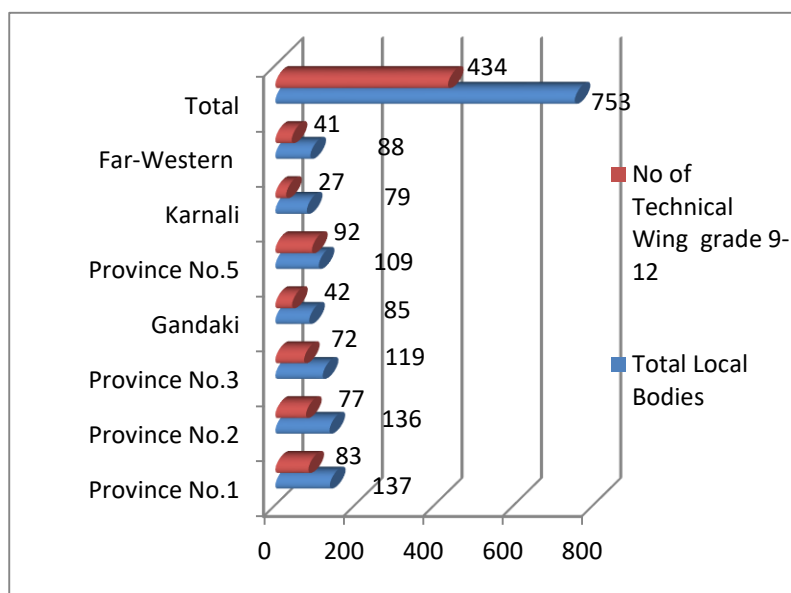
<sup>iv</sup> The number of the Technical wing in the school has been increasing, since this has been affiliated in demand by the local government.

**Table 3 Technical wing in grade 9-12**

S.N.	Provinces	Total Local Bodies	No of Technical Wing grade 9-12
1	Province No.1	137	83
2	Province No.2	136	77
3	Province No.3	119	72
4	Gandaki	85	42
5	Province No.5	109	92
6	Karnali	79	27
7	Far-Western	88	41
	Total	753	434

Ref: Fact Sheet on Technical education, Published by CTEVT 2076.

Out of 753 local governments, 434 community secondary schools with the technical wing of education established in the style of distribution; it gives a glimpse there will be 753 or more community schools with the technical wing in the country; If this is the way of the technical education still 369 lacking.



**Figure 3 Technical Wing 9-12 in School.**

**2.4.3. School Level TECS Program<sup>v</sup>:** The program is designed especially to focus to implement Technical and Vocational education/ training in general secondary schools. The program started in 2002, under the control of CTEVT in collaboration with the Department of Education. It facilitated sharing the part of the physical facilities, human resources,

<sup>v</sup> The data is taken from the fact sheet of CTEVT, since the annex is a part of the CTEVT program. It runs on its direction and exam also controlled by CTEVT, most of these are TSLC Program.

management, and will make responding to the steering committee of the schools. Cost-sharing in between government and local community so that technical education could be imparted at little cost without much financial burden to the stake holders. The courses offered in the program are ‘auto mechanics, mechanical and electrical fields, veterinary science, general agriculture, electrical and information technology’ (Kafle, 2007). It has been replicated stage in many schools till the date these are 397 distributed in all provinces.

**2.5. Curriculum structure of TVET in School system.** TVET students in Grade and 9 have to study 6 generals and 6 Technical and vocational subjects, all together have to study 12 subjects and Grade 11 and 12 have included all science subjects (Physics, Chemistry, Biology, and Math) and TVET subjects. The Science subject was found heavily weighted than TVE subject’ (MOE, 2017).

Under these circumstances, can the stream justify the crux of TVE? Certainly, it will have deficiencies to fill the gap of skilled, competent, and knowledgeable human capital. While preparing the curriculum? Where is the focus on TVE and science subjects? Whether the students will cope with all these pressure of the subjects to be studied or not would be an issue in the Grade 9-12 technical subjects. It has pushed technical education towards the edge of clerical education, in the name of technical education, not producing the human capital required to the community.

#### 2.5.1. ‘TVE Subject Implemented in the School Level:

Mainly 4 subject areas found in the curriculum in the publication of CDC. The secondary level school curriculum Technical and Vocational level for 9th and 10th grade are Civil Engineering, Computer Engineering, Electrical Engineering, and Animal Science likewise in Grade 11 and 12 are Animal Science, Civil Engineering, Computer engineering (CDC M. , 2019).

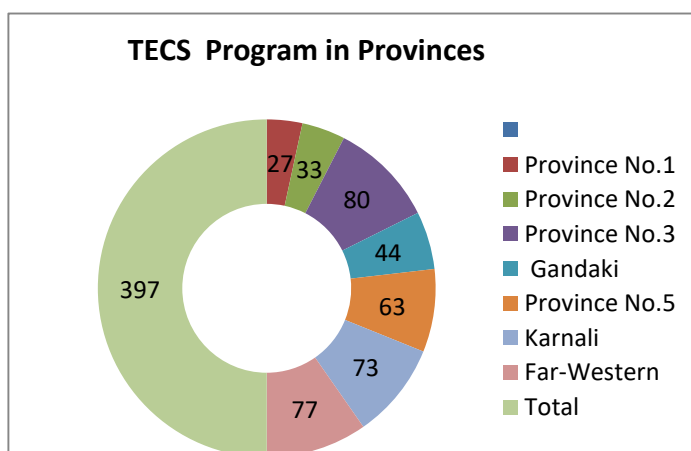


Figure 4 TECS Program in the Community School

and

### 2.5.2. Over view of Theory and Practical.

CDC did not publish the concrete outline of the curriculum structure; it has an individual course distribution as follows.

**Subject:** Maintenance & Rehabilitation of structure (grade xii) 'Full Marks: 100 (75T + 25P) Pass Marks: 27T + 12.5P Hours per week: 3T + 2P Teaching Hours: 150 [Theory (T) 90 + Practical (P) 60]' (CDC, 2019). This is an example, the total pass mark is 40, and the theoretical contact part is more than practical. In a few courses more practical found than theories, for example, the course outline is as below.

'Road construction material and testing (grade xi) full marks: 100 (25t + 75p), pass marks: 9t + 37.5P; Periods per week: 1T + 6P Teaching Hours: 210 [Theory (T) 30 + Practical (P) 180 (CDC, 2019),), in this subject 1:6 ration found period allocation between theory and practical.

It indicates some subject areas, the civil have practical teaching and material testing may not be the ultimate requirement in the working field. They should be able to work in the field not in the laboratory only. The balance between, Physics, Chemistry, Math's and other subjects should have maintained to produce competent human capital, OJT is not considered important during the study period of 4 years.

The major concern in the subject delivery approach is not trainee/student-centered, problem-solving approach lacking altogether, a heavy burden to the students does not bear fruit to fill the gap of required human resources for the development of the country. The provision is 1000 full marks in secondary education 9th and 10th grade with the core subjects as designed the Ministry of Education and at the end of the 10th grade they will write the SEE examination; they are regarded as TSLC.

### 2.6. Level wise (or competency) based technical training:

Skill test was initiated since 1983; an autonomous body was made to conduct called Skill Testing Authority (STA). 'It introduced occupational classification, development of skill standards skill testing, and certification based upon the guidelines of the Asia Pacific Skill Development Project/ International Labor Organization' (APSDEP/ILO) (NSTB, 2019). Skill testing exercise has been taking place before the establishment of CTEVT, it has been giving hope to the youth of Nepal where there was no technical institute to cater to their interest. NSTB has made occupational standards through the process of DACUM more

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than 317 Occupations, from elementary level to 4; level 4 is only in two subjects House Wiring and Ophthalmology

**NSTB and its production 2076.**<sup>vi</sup> To date, NSTB produced 337171 all together from 1983 to May 2019 in level -1 to 4.

Table 4 .NSTB and its output in 2076.

Levels	Exam Appeared	Passed
1	23292	17811
2	10393	4468
3	936	273
4	Nil	Nil

Source : CTEVT: Fact Sheet 2019

When the level is increased the number of candidate decrease, Candidate of level-I - 299640, candidate of level-II 26772, Candidate of level-III 2862 and Candidate of level-IV-37 passed since the establishment 1983 to 29th May 2019 (15th Jestha 2076). These are great numbers but when the competency increased the numbers are lowering which is worrisome since this was the outlet to make the people competent, professional who are deprived of formal technical education.

**NVQS:** Nepal Vocational Qualification System is designed to bring in all qualification of TVET under an umbrella to produce competent, dedicated, skilled, and knowledgeable human capital to promote inclusive growth and to combat poverty. Swiss Agency for Development and Cooperation has been supporting the Ministry of Education to Establish NVQF (National Vocational Qualification Framework); ultimately it will lead towards NVQA (National Vocational Qualification Authority) (NSTB, 2019). The program is in the initial phase; the first phase is 2015 -2019. The authority is expected to enable a framework so that it will have set standard across the technical education and vocational training.

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<sup>vi</sup> This is taken from the fact produced by the CTEVT, these numbers are up to 15<sup>th</sup> of Jestha, 45 days before the Financial Year 2019.



**2.6.1. NVQS and its' envision with equivalency.**<sup>vii</sup> This system of competency-based technical education recognized the prior learning and provided equivalency.

Level- 1 to Ph.D.					B.Tech . Degree	M.tech Degree	Ph.D.
Entry Skill Certificate	Basic Skill Certificate	National Skill Certificate	National Technician Certificate	National Diploma			L-7
						L-6	
			L-5				
	L-4						
L-3							
L-2							
L-1							

This was proposed by the NVQS preparing team, still under scrutiny, and submitted to the final approval from the cabinet. Within system Recognition to prior learning is highly recognized. All informally learned skill and knowledge in the field of technical education will be recognized by the testing system, if anyone passes the level certificate, in this system if anyone passes L-5 and allowed to write entrance examination of Engineering education, if they continue with this system they will be given Bachelors' of technology degree

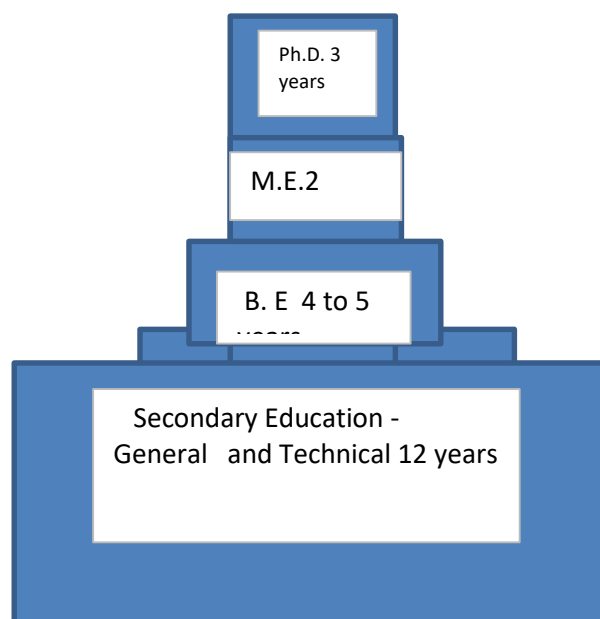
which is equivalent to Bachelor of the engineering system and will proceed up to Ph.D. Level.

**2.7. Technical Education system of Nepal.** The study identified that there are three different approach to pursue technical and engineering education.

<sup>vii</sup> The information on this is taken from the leaflets of produced by NVQS office- Sanothimi.

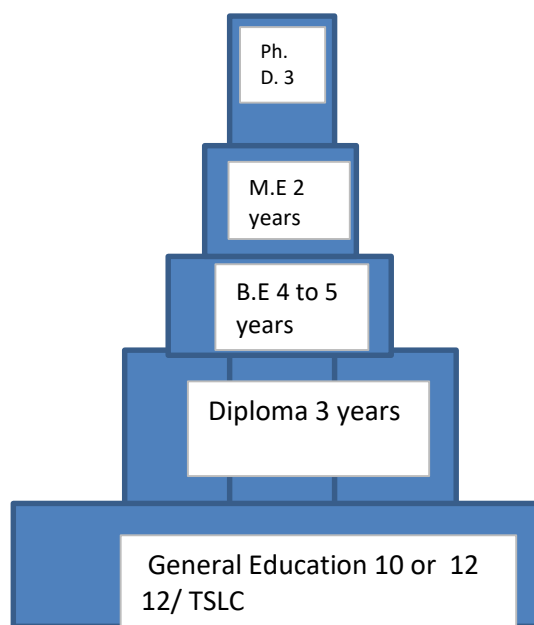
**a. Bachelors of engineering.** Entry requirement 12 passes with Physics and Math: These students sit for the entrance Examination for the engineering education which is 4 to 5 years of duration, in the engineering institutes are affiliated with universities of Nepal.

‘In the case of Letter Grading System, students should have secured a minimum "C" Grade in all subjects in Grade 11 and 12. OR the students who have a minimum score of 45% in I. Sc. or 10+2 (physical group or biological group with two paper mathematics) or diploma in engineering or an equivalent course recognized by TU’ (Sanjal, 2019).



**b. Diploma intake SEE Exam Pass with C in Math.**

**Entry requirement:** This student can enter in the Diploma Course of technical education. They have to pass the entrance examination conducted by CTEVT. These are also allowed to appear in the entrance examination for engineering education/ B. Tech. ‘Secured at least **grade C in Compulsory Mathematics, and Compulsory Science and Grade D+ in English** in School leaving Certificate (SLC) examination from a recognized academic institution’ (sanjal, 2019).



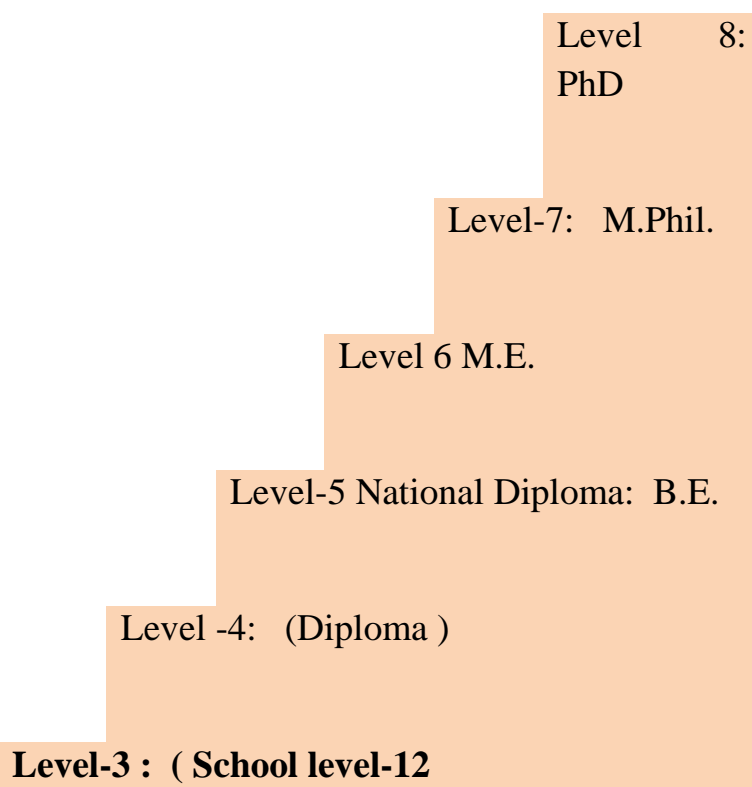
**c. Recognition of Prior Learning:** The student should have basic education and enter the technical wing; these students can also pursue Level-3 (School level-12)

to the higher level of Technical education. They can enter from level -3 and proceed to higher attainment. These should also allow entering to appear in engineering education after National Diploma.

Curriculum formation for this also should go side by side as other degrees so that all three systems will have a competent education system, Diploma should also be allowed to go for Notional Diploma competency examination.

This system may work in the field of NVQS, there is a slight deviation in this proposed system. Level-5 should

be recognized as B. tech or B.E. Level since these are much better in the field, if they attained up to this level, their knowledge in technology may be higher than others.



### 3. Federalism and Education.

Federalism has provided the responsibility of the education to the local governance; it will foster competition between local bodies for quality assurance, implementation, infrastructure construction, and local need identification to tackle the unemployment of the youth. 'No child left behind' (NCBL) should be implemented; it is possible under the federal system of governance. The central level could not recognize the local level needs and for those who want more and more to make education pivotal for economic development and change provides unique opportunities' (Frederick M. Hess and Andrew Kelly ., 2015)

**3.1. Constitution of Nepal and Education.** Educational rights of the people has ascertained by the constitution of Nepal.

### **3.1.1.Right to education:<sup>viii</sup>**

Article 31 of the constitution of Nepal provided the right to technical education.

1. Every citizen shall have the right of access to basic education.
2. Every citizen shall have the right to get compulsory and free education up to the basic level and free education up to the secondary level from the State.
3. The citizens with disabilities and the economically indigent citizens shall have the right to get free higher education by law.
4. The visually impaired citizens shall have the right to get free education through brail script and the citizens with hearing or speaking impairment, to get free education through sign language, following the law.
5. Every Nepalese community residing in Nepal shall have the right to get an education in its mother tongue and, for that purpose, to open and operate schools and educational institutes, by law’ (Constitution of Nepal, p. 40)

### **3.2. Local Government Act in Technical Education.**

The local government act 2073, chapter 3, No 3 clearly said on education as ‘Planning, operation, approval, monitoring, evaluation and regulation of technical education and vocational training’. (Government N., Local government act-2073, 2073) The act has given the authority for approval as well, how to exercise its authority and responsibility on approval still in a question mark? It is waiting for approval either from the secondary department of CTEVT. These bodies are the regulatory body for curriculum development and maintaining standards throughout.

Chapter, no 6 said ‘Establishment and management of village and municipal level education committees.’ These schools will be managed by the local government. Formulation, implementation, monitoring, evaluation, and regulation of policies, laws, standards, and plans for early childhood development and education, basic education, parental education, informal education, open and alternative continuous learning, community learning have been the responsibilities of the local government

The constitution has provided the total right of education, giving rights is not enough, it should be translated into action, the basic education is made free and compulsory but in

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<sup>viii</sup> The constitutional part is taken as it is from the translation of ‘Law commission of Nepal’. Hopefully the translation represents the core of the article 31- Author.

implementation compulsory part is lacking; here the economic part comes in to adhere to the constitution

### **3.2.1. Policies in the Constitution On Technical Education.**

1. to prepare human resources that are competent, competitive, ethical, and devoted to national interests while making education scientific, technical, vocational, empirical, employment and people-oriented,
2. To make private sector investment made in education service-oriented by regulating and managing such investment while enhancing the State's investment in the education sector.
3. To make higher education easy, qualitative and accessible, and free gradually,
4. To establish and promote community information centers and libraries for the personality development of citizens,

### **3.3. Local Government Act in Technical Education.**

The local government act 2073, chapter 3, No 3 clearly said on education as ‘Planning, operation, approval, monitoring, evaluation and regulation of technical education and vocational training’ (Government N. , Local government act-2073, 2073) The act has given the authority for approval as well, how to exercise its authority and responsibility on approval still in a question mark? It is waiting for approval either from the secondary department of CTEVT. These bodies are the regulatory body for curriculum development and maintaining standards throughout.

Chapter, no 6 said ‘Establishment and management of village and municipal level education committees.’ These schools will be managed by the local government including act No 1. Formulation, implementation, monitoring, evaluation, and regulation of policies, laws, standards, and plans for early childhood development and education, basic education, parental education, informal education, open and alternative continuous learning, community learning’ (Government, 2073).

**3.4** The Ministry of Education, Secondary Department has formed a Steering Committee chaired by the Secretary of Ministry of Education and formed directives to guide the Technical and Vocational education in secondary education. The first directive was made in 2069 and amended on BS 2071-2-20.4. Governance of Technical Education in School Level. (Education, 2014)

3.5. (11) CDC and Council (CTEVT) both of these organizations will engage to form the curriculums, CDC will have developed curriculums of core subjects those are 400 full marks and another 600 full marks TVET curriculums will have constructed by the Council, all together they will have 1000 full marks in TVET course of study.

3.6. (12) CDC will form the curriculum and examination and evaluation work will be carried out by the Office of Examination Controller<sup>ix</sup>. (Education, 2014).

### **3.7. The governing structure for technical education in local level<sup>x</sup>**

The governance of the Technical level more at the central level and distributed to the local level as well, the certification and curriculum making is highly centralized; will it serve them to the quality of the technical education? It is questionable.

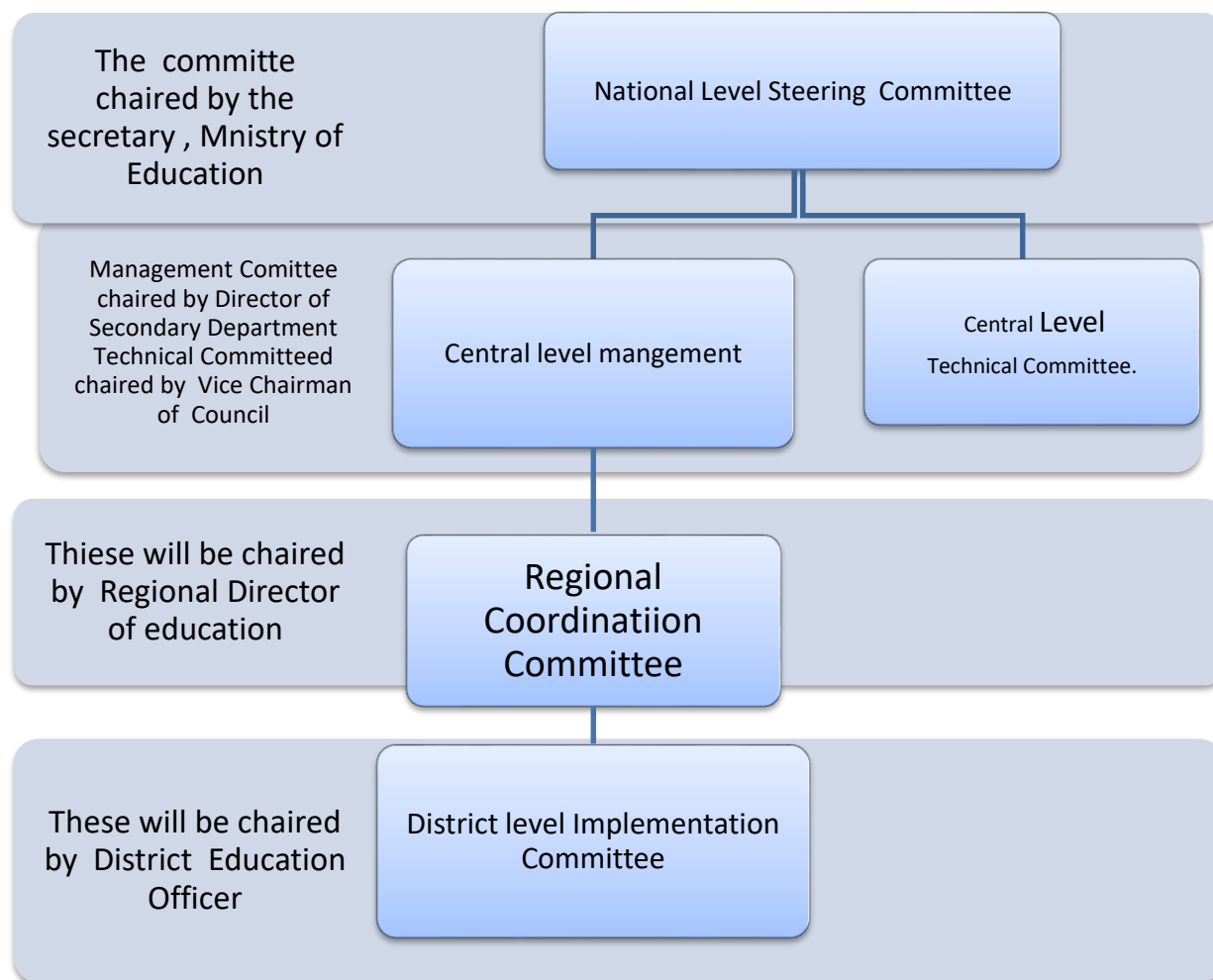
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<sup>ix</sup> The original directive published in Nepali Language , during the time of study, it is translated, the core essence is tried to kept as it is, Author

<sup>x</sup> The diagram of technical school governance is made as given in the directive of technical education, amended on 2071- Author.



## Structure of Governance of Technical and Vocational education.



The headmaster of the School will be responsible to implement the program as directed by the district level implementation committee. In the chart, it is mentioned at the regional and district level. Here It should be provincial and Municipalities. Municipalities need to play a vital role in implementation.

## SWOT Analysis of Technical education.

On the basis of the literature and data review, the SWOT analysis is carried out and these will be helpful to draw the strategies of technical and vocational education

<p><b>Strengths.</b></p> <ul style="list-style-type: none"> <li>• Power delegation to LGIs for Technical Educational Institute Management and running.</li> <li>• Technical and Vocational Education will be as per the local need.</li> <li>• PPP program could be implemented without much problem.</li> <li>• Curriculum could be designed as per to meet local, regional, national and international demand, it will prepare youth world of work.</li> <li>• Establishing equipped Technical institute to meet the demand of skilled human resource.</li> <li>• Direct supervision from LGIs for quality control of the Institute.</li> <li>• Flexibility in tailor made course design and implementation.</li> </ul>	<p><b>Opportunities.</b></p> <ul style="list-style-type: none"> <li>• Being competitive in quality production of human capital.</li> <li>• Able to experiment the new idea, and innovations in technical and vocational education sector ..</li> <li>• Develop, built the infrastructure that are sound to the technical and vocational education.</li> <li>• Competent Human capital production with close supervision by the LGIs.</li> <li>• Setting up production units to make the institute self sustained and attracting entrepreneurs to invest and manage the production units.</li> <li>• Open up doors to mass production in certain areas</li> <li>• Branding their products.</li> <li>• Production of entrepreneurs.</li> </ul>
<p><b>Weaknesses.</b></p> <ul style="list-style-type: none"> <li>• Centrally controlled for affiliation and curriculum formation.</li> <li>• Distribution technical Institutes to community Schools.</li> <li>• Poor supervision in quality control.</li> <li>• There are no proper trainers to proper delivery of contents.</li> <li>• Lack of resources, lack of tools and equipment as per the need of the subject matter.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Lack of understanding in TEVT running environment by the local bodies to implement the technical and vocational education, as have been now.</li> <li>• Not understanding the aspiration of local governments by the central and provincial government.</li> <li>• CTEVT and Secondary Department are contradicting one another, what should be the role of secondary department and CTEVT is not clearly defined.</li> <li>• Poorly financed to the technical institutes.</li> </ul>

<ul style="list-style-type: none"> <li>• Delivery centered to theory part, not motivated in innovative approach.</li> <li>• Poor infrastructures in the schools.</li> <li>• Management team have aspiration but not know how on technical education and training.</li> <li>• National vision/ Constitutional vision and practice differ.</li> <li>• No proper direction to the Local governments on the issue of conducting Technical education in the areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Poorly managed governance of the technical institutes.</li> <li>• Not linking with the economic development</li> </ul>
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#### 4. Issues and Challenges in Education and TVET sector.

With the study of TVET sector of Nepal some of the issues are clearly visible, those are contradicting the programs, overlapping the program, need assessment or human resource / capital development plan did not found in place, employment creation and future requirements of the human capital is not visible, haphazardly the affiliation distributed, in some subject areas there will be surplus human capital in other areas there will be lacking, imbalance of human resource development is going to take place; all these are the issues but some of them are critical

**4.1. Issues in Education:** National economic formation for reducing trade imbalance is must as compulsion to Nepal. It demands the productive workforce; the demands of productive work force higher in the marketplace. Technical education is vital to produce competent human capital for the development.

##### 4.1.1. Cross cutting issues

- i. **Quality of Education:** Quality of education particularly in community school is not as desired level, it needs to improve in all sectors.
- ii. **Teachers' Motivation:** Teachers motivation is lacking to improve the teaching quality; without their active involvement the quality of education would be next to impossible.

- iii. **Infrastructure:** Very poorly designed infrastructures in school level for the practical education.
- iv. **Use of Teaching aids:** Teaching aids as per the changing context are lacking in the schools, such as posters, charts, projectors, computers and use of internet to research in the contents, that are updated.
- v. **Quality of Teachers and teaching:** The quality of teachers is questionable particularly primary, secondary and technical subjects. What should be the quality of teaching? At least the teacher should be well prepared on his subject matters and that should be delivered properly made students active, inquisitive in his content for being researched in the topics, it has been lacking in the school and technical areas of teaching in Nepal. Problem solving approach missing in curricula itself.

**4.1.2. Issues in General Education:** This is directly linked to the students and performance in the technical education as well, the listening, comprehend, think on alternatives are major aspect in technical education, it is equally important in general education.

- i. **Teacher student ratio in the schools:** In some school, the ratio is 1:35 in some cases 1: 5 or less. It made expensive education; tax payers' money is not properly utilized.
- ii. **SEE exam:** It is still dominating but the pass percent increasing but the quality has been decreasing; it should be controlled.

#### **4.1.3. Issues in Technical Education.**

i. **Technical education dejected:** Technical schools are distributed to the community schools as vocational subjects during the period of NESP (1971-76) which is already dejected in the educational system of Nepal. Technical education should have certain criteria to implement the measuring rods are not considered and it is not widely discussed as well; Engineering education regarded as technical education; this is a mistake in policy level.

- ii. **Human resource requirement:** It is not surveyed to identify the requirements and quality of technical manpower is not considered.
- iii. **Lack of proper instructors:** Proper teachers in technical field are not available even in the country; diploma pass and engineers are teaching the students who do not have even the zeal to teach.

*An Overview of Technical, Vocational Education and Training (TVET) in the Context of Federalism in Nepal.*

**iv. Proper learning environment:** It is a prime requirement in technical subjects that is lacking in the institute since the lack of understanding that has taken ‘paradigm shift in learning’ (Thareja, 2017). If it is further elaborated technical instruction to prepare the competent/ skilled human capital, the general schools are not suitable, it is failing to create motivational environment in technical subjects. ‘A plethoric expansion consequently threatened the standards and quality of technical education, which was severed by the unavailability of required infrastructure and trained faculty’. (Thareja, 2017)

**v. Proper Infrastructure:** The quality of workshop with enough ventilation, lights, toilet facilities, store rooms, tools cabinet, proper flooring, proper electricity supply, store rooms, instructors preparation rooms and water supply and maintaining internal temperature determines the quality of workshops.

#### **4.1.4. Policy issues.**

- i. Technical education implemented in urge and whims of some people without proper planning and the structure of the technical education was not considered.
- ii. Proper effort lacking to make it workable to fill the gap of skilled human resource in the country.
- iii. Subjects demand by the community was distributed, the demand by the community may not have plan in human capital requirement and their standard as required by the national and international community.
- iv. **Deviation in action:** Deviating from the objectives of technical education during implementation of TVET in the schools.

#### **4.2. Challenges.**

Relation in between general and technical education could not be separated since the quality becomes the culture, the quality in one area the other sector would have quality; if we consider this fact, both the educational faculties have their own challenges.

#### **4.2.1. Challenges in General education.**

i. General education and technical education both have challenges to meet the aspiration of the people and demand of the development since both are not planned to fill the gap of human capital requirement in soft skills, management skills and hard skills.

ii. For quality output effort demanded from the stake holders such as refreshing training to the teacher, curriculum reform, adequate teaching facilities in the school system.

**iii. Teacher Training and Placement:** Teachers have major role in quality output in education, the core element of quality finds in efficiency, diligence, innovative and motivated teachers with proper aptitude in imparting knowledge and skill.

The cultural aspects also play a vital role in quality delivery, in the context of Nepal since the country has subsistence farming system which is the main feature of living for 70% of teachers, so they want to be nearer to their home, it means preparation time spent in household chores; they come to school tired physically and mentally as well, how can they deliver the content properly? So when they are placed in home ground there should be transferring policy in every 2 to 3 years, it will provide them to rethink on their duties and responsibilities. Providing refreshing training time and again to the teachers for making them confidence to use modern teaching technologies in the class rooms; it is a challenge in the context of Nepal.

#### **4.2.2. Challenges in technical education.**

**The main challenges are;**

1. The content and delivery of technical and vocational training.
2. Development of teachers, administrators, and other staff in support of program execution.

#### **4.2.3. Other challenges in technical education.**

- i. **Investment in technical education:** This is less than 1.3 % of the total educational budget allocated.
- ii. Donor dependency in implementation of short term training programs for disadvantaged youths of Nepal and the training are short duration, not producing desired quality.
- iii. Creating technically sound environment to teach and train the youth.



- iv. Ad-hoc policy formulation without study of the situation. It is clearly visible the subjects whom are easier to teach on the boards are more affiliated rather than the requirement of the market, many furniture makers are required, and welders are required but not avail in the affiliated subject areas.
- v. Five million youth are in the foreign countries mainly Gulf countries and Malaysia, study of their need and producing the quality as per their need seems a big challenge.
- vi. Producing desired workforce required with quality to the country will not be produced from the School level.

## **5.Findings of the study.**

Findings of the study, Recommendations and Way out for Promotion of technical and vocational Education in Nepal.

### **5.1. Findings of the study:**

- a. Despite all challenges, the local government is being aware of their responsibilities and duties which is a good gesture to improve the quality of education in Nepal.
- b. National level policy formation has been carried out without adequate home work on the issue of technical education and vocational training.
- c. Adequate fund should be allocated to the local governance to technical education and vocational training. It will support to create entrepreneurs.
- d. Government is giving authority to the community schools, which has a danger of being converted into the vocational schools of the past which is not a very successful case in our context.
- e. Partnership with industries negligible, it should be made compulsion or technical institutes should have its own production units and consultation services, so that students/ trainees will have first hand market experience.
- f. Only Technical course should be provided in the technical education in proper environment.
- g. Technical educations curriculum found not compatible with the market need.
- h. OJT is taking lightly in the present structure of the technical education; in many cases they are not even asked with the employer being agreed to have the technical education.

- i. Problem solving approach in delivery is missing in the present technical curriculum technical education and vocational training.
- j. I.T is not introduced as subject in technical education which is highly required, infrastructure in many schools are not up to date for IT sector to introduce, even competent human resource scare in many part of the country.
- k. Technical wings are found poorly equipped, since he management team is not aware n the requirements and importance of the teaching and learning facilities.
- l. Technical Instructors are not trained as instructors; they are taking teaching as stepping stone of their career.
- m. Engineering council, public service commissions, government autonomous body found not being oriented on the importance of competence based education and training. (At present NSTB has been conducting competency based technical training program, on the basis of this NVQS envisioned )
- n. Technical education should be flexible mode to upgrade their qualifications as well, credit transfer recognition of their prior learning.

## **5.2. Recommendations as way forward.**

- i. LGs should be in full responsibility of implementing Technical and Vocational education not distributing from secondary department and CTEVT.
- ii. In the provinces Technical Education conducting and supporting department need to be established as its autonomous body which will control, run the provincial level examinations, funding technical institutes established in the municipalities.
- iii. CTEVT should be made responsible to conduct their constituent technical institutes as the center of excellences, it should be stopped for distributing licenses
- iv. Secondary department should stop distributing the Technical Education in the school; this is a waste of time effort and money too.
- v. Technical Education should be optional in School level as design and technology with problem solving approach. It will help them to enter in the Technical subjects and engineering subjects to be specialized after grade 10 or 12.
- vi. NVQS should be implemented to regulate Level based competency education. It should be widely recognized in the Government bodies, it will help to produce competent human capital.

- vii. Technical Institute should have full facilities with hostel in between two Rural Municipalities, so that they will have economic resource to contribute.
- viii. For poor people it should be free of cost including hostel cost or in loan. Provide loan for interested people to be skilled in the subject of their interest, it should be made bond to start to pay after getting jobs in Nepal or abroad.
- ix. Technical Institute should be established in PPP concept in collaboration with industries or investors who are ready to take up the human resources as per their need.
- x. Specialized course need to be tailor made with the need of the Industries.
- xi. There are scattered programs run by the ministries, those possible one need to integrate for quality production and certification to be accredited properly , to do this a Technical training and education grant commission should be established for financing and managing technical education.
- xii. Instead of running individual programs, all ministries and departments should send their professional for further training, it will ensure quality and cost effective as well.

**5.3. Contribution of the Study.** The study will contribute on the following to demarcate the role and responsibilities of different tiers of the government.

**5.3.1.** Define and strengthen the federal bodies of the government on education.

**a. Ministry of education:** It will play the role of policy formulation, international relation, research and study, support on infrastructure development, financing through provincial and local government, envisioning for developing human capital required in knowledge based economy, checking to implement the program as per the requirement of constitution and guiding to the provincial and local government as well.

The ministry of education should have central role on to establishing few excellent centers for modern technology and production such as in aviation, space, nuclear technology and technological innovation and production.

**b. Provincial Government:** Establishing controlling mechanism of examinations, support on curriculum formation, support for infrastructure development, encourage in financing for PPP concept in technical education and production, market creation and support to establish industrial states for creating jobs to the technically trained youth.

**c. Local government:** Creation of conducive environment for technical education up to diploma level and construction of proper technical institutes equipped with tools and equipment, attracting business people to invest in technical and vocational institutes.

**5.4. Formation of concept on technical education:** It should be independently established with conducive environment to produce competent human capital with market orientation and it should have hostel facilities, sports and industrial practice facilities 20 hrs. a week after their studies, the students will be paid as per the market.

**5.4.1. Cost sharing basis:** The institute should be established with cost sharing basis, so that the local government alone would not bear the cost of the education.

**5.5. School level technical and vocational education:** It should be the motivational factor for specialization, if they have basic skill and knowledge on the subject it will be recognized and credited in the Technical institute. 9-12 production based design and technology. It should be made idea creation problem solving but it should also be with proper teaching workshops and materials as well.

**5.6. CTEVT and Secondary Department of MOEST:** These should not be the license distributing authority for the technical and vocational education; the responsibility entirely shifted to the local government.

The end.

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