A STUDY ON TECHNICAL AND VOCATIONAL EDUCATION IN SECONDARY SCHOOL AS A SEPARATE STREAM: REQUIRED POLICIES, STRATEGIC MEASURES, IMPLEMENTATION ARRANGEMENT AND IMPROVEMENTS NEEDED IN TEACHING LEARNING TO ENHANCE PROGRAM EFFECTIVENESS

Final Report

Submitted to

Department of Education (MoE)
Sanothimi, Bhaktapur, Nepal
July, 2017

Submitted by

Santwona Memorial Academy Pvt. Ltd.,
Educational Research and Consultancy Centre,
Shantinagar-34, Kathmandu, Nepal
Ph: 01-4106632, 01-4622221
e-mail: santwonacollege@gmail.com

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

The research was conducted by a team of researchers from Santwona Memorial Academy, Educational Research and Consultancy Centre, led by Prof. Kshitiz Upadhyay Dhungel. The research was coordinated by Asst. Prof. Rupendra Pokhrel. The data analysis was carried out by Prof. Kshitiz Upadhyay Dhungel, Assoc. Prof. Janardan Ghimire and Asst. Prof. Rupendra Pokhrel.

A number of people provided useful inputs at various stages including formation of questionnaire, analysis of data, sampling strategy, arrangement of fields. So, we would like to extend our hearty acknowledgements to Prof. Dr. Tanka Nath Sharma, School of Education, Kathmandu University, all the members of research department of DoE especially Deputy Director Mr. Kewali Ram Adhikari, Second Officer Ms. Bhima Devi Koirala. Further, we would like to appreciate invaluable input from Director General Mr. Baburam Poudel. Information Officer Mr. Tukraj Adhikari, Spoke Person Mr. Keshav Prasad Dahal, Deputy Director Mr. Hari Prasad Aryal and Section Officer Rajan Pandey from TVE for their feedback during the presentation of different phases.

Special thanks go to all the members of the team of researchers for their dedication in overall research: the lead researcher Prof. Dr. Ram Prasad Pandit, Ms Jamuna Khatri, Janardan Ghimire, Rupendra Pokharel, and data collectors Durga Prasad Dahal, Yam Prasad Bhusal, Mr. Janardan Ghimire and Bhakta Bahadur Shahi. We would like to remember here Ms. Muna Chaulagain for providing support in editing Nepali Language. Mr. Ananta Ghimire, Mr. Arjun Prasad Adhikari, Mr. Mukunda Poudel, Ms. Rekha Adhikari, Ms. Arju Ghimire and Mr. Nabin Mandal also deserve thanks for their administrative, computer and logistic supports.

This research could never have been possible without the support of the Headmasters, SMC Members, Teachers, Students and Guardians of the sampled schools. So, we thank them for their efforts in enabling us to obtain authentic data.

The study was funded by DoE, Department of Research and Development.

Santwona M. Academy
Educational Research and Consultancy Centre
Date: 2074/03/20

EXECUTIVE SUMMARY

TVE was experienced at the secondary level since it was conceived in the National Education Planning 2028 but being it unsuccessful at the implementation level, it was phased out from the secondary schools. Another attempt was made then and CTEVT was established with the objective to systematize vocational education for the development of mid-level manpower. However, CTEVT could not incorporate the target group in an adequate number as it focused more private intuitions than public. On this background, MoE, realizing the need for increasing the access of the target group to TVE on the basis of social justice pointed out by SSRP and furthered by SSDP, decided to implement TVE stream in the national public schools. In the year 2070 BS, MoE selected 100 different secondary schools from the different part of the nation and started the piloting of five TVE steams in those schools approving one stream to one school. By now the number of schools which have gained approval to run TVE stream has reached 240.

This research is an attempt made by the MoE to assess the present status of TVE stream in these schools, especially focusing those started as piloting project, finding out the answer of the following questions:

- How is the TVE stream doing at its piloting phase?
- What is the status of implementation of policies and practices?
- How is the teaching learning process going on?
- What are the strengths, weaknesses and challenges of the program?
- What mitigating measures may be adopted to improvise the quality of the program and extend its access to the target group?

The major objective of the research is to find out the possibility of technical and vocational education in secondary school as a separate stream and required policies, strategic measures, implementation arrangement and improvements needed in teaching learning to enhance program effectiveness.

Based on the objective of the study, the data was collected and analyzed using the mixed method (Quantitative and Qualitative). The sources of information remained policy makers, policy documents, implementation authorities and the stakeholders of implementation levels. The primary data was collected using the structured and semi-structured survey forms, class observation forms, semi structured interview schedules, FGD schedules, etc. and the reflection was noted down in the form of field note while administrating these tools. The obtained quantitative information was tabulated in the Spreadsheet in the Excel program while the qualitative information was themetized and managed identifying different headings and sub-headings based on the objectives of the study. Stepping on the mixed method research tradition, the information and data were analyzed, described and presented to derive meaning out of them.

Viewing from the perspective of education system (i.e. input, process and output), majority of schools were found to fulfil the quota of 48 allocated to each grade of each stream but majority of the schools in the Terai region have not fulfilled the student enrolment quota. This shows that the access of target group to TVE streams in this area yet to be gained. The access of the target group to this stream is still questionable as most of the schools have entrance-based enrolment procedure. The schools have found it very difficult to manage TVE teachers. Frequent turn over the TVE teachers is a regular activity. The teacher selection process appears tedious, lengthy and expensive which has added to the complexity of the academic activities. Most of the TVE teachers were found to undergo 10-days training, which is a very short period for a teacher to

gain competency on teaching-learning method and acquire the skill and knowledge required. How can teaching-learning be effective in the absence of teacher's knowledge on teaching method? Professional insecurity of the TVE teachers has exerted influence on the motivation of teachers negatively.

Majority of sampled schools were found to have sound physical infrastructure like school compound, playground, buildings, furniture, energy supply, etc.. Buildings are being constructed in some of the schools and almost all the schools have laboratory. Though the capacity of these laboratories are sound enough for Grade 9 and 10, further improvisation and instillation is required to strengthen them to soundly fulfil the demands of practical works at Grade 11 and 12. The students were found to bereft of the opportunity of learning by doing in some of the schools. The infrastructure for the Animal and Plant Science streams was found sound and adequate provided that the schools directed their efforts towards their maximum utilization. Almost all the sampled schools were found to have a library but being its management very poor, the students have not gained its optimum utilization and benefits.

Governmental financing is the major investment in the TVE stream. Majority of schools are dependent on it while some of the schools have gained the aid from None Governmental Organizations. Some of the schools in the Terai and schools in the urban area have generated alternative financing source.

The class observation done during the time of this study showed that teachers performance in teaching of the theory was mediocre but majority of teachers were found to be unable to create a situation for learning by doing in the practical classes. The students were found to complain that

they never had the opportunity for the practical classes in some of the schools (due to instability of the teachers.

There are six TVE subjects at Grade 9 and 10 in TVE streams. The students of this stream should also study six subjects of the general stream. Despite being the curriculum of Grade 9 and 10 very heavy compared to the General Stream, it can be considered relevant as the students have felt comfortable to some extent. However, the curriculum of Grade 11 and 12 includes all the subjects of +2 science stream apart from TVE core subjects. As a result, the weitage of pure science subjects (Physics, Chemistry, Biology and Math) is twice or more than the TVE subjects. Under this circumstance, can the stream justify the crux of TVE? TVE education basically was focused to prevent the dropout of weak (in academics) and for those students who may not afford their higher studies financially or academically. After studying TVE even up to 9 and 10, they can enter a job market and sustain their livelihood. The curriculum of Grade 9 and 10 were thus focused on skills. So, 6 subjects focused practical and vocational subjects while 6 other subjects cater to core-curriculum of secondary education. Later on, when Grade 11 and 12 were introduced, the designing of curriculum took place amid the confusion pertaining to weather the course is for technician or overseer or as a bridge to higher education (like engineering, Vet doctors etc.) resulting in the product of confused syllabus which included all subjects of +2 science stream and 2 vocational subjects each in grade 11 and 12. It means the curriculum did not focus TVE subjects as in class 9 & 10 but focused on subjects of +2 pure science streams.

The discussion above shows that the curriculum of Grade 11 and 12 incorporates only two TVE subjects in each Grade. So, it is concluded that the curriculum is not relevant for the Grades. Therefore, redistribution of subjects of the prescribed curriculum from Grade 9 to 12 is necessary so as to minimize pure science subjects to make room for more practicable TVE subjects.

It appears irrelevant to prepare question papers on the basis of the grid provided for general streams (for instance: very short answer questions). The practical examinations were also found theory based like Viva-voce which cannot assess the efficiency of the students in work. Many students from Electrical Engineering and Plant and Animal Science stream have already been employed and generated self-employment.

Many schools were found to rely on the root of good governance whereas governance system of some of the school was found opaque and suspicious. The schools, where the head teachers are transparent and active, have gained community support. The students, teachers and community was found dissatisfied with some of the head teachers and they were found to use the SMC as the stamp.

To motivate the teachers to ensure quality in TVE stream, it seems necessary to revise the facilities of the TVE teachers along with the assurance of security and stability. Introducing the provision of licensing and competing in the Teacher Service Commission appears mandatory for the stability of the TVE teachers.

The students in the TVE stream were found suffering from the confusing OJT provision. To mitigate this problem, OJT can be distributed among the Grades from 9 to 12 on hour basis. Based on the suggestions obtained from various TVE schools, it is appropriate to allocate 1200 hours of OJT distributing it in all grades equally (300 hours each grade).

Based on the field observation, perception of the stakeholders and availability of the infrastructure, TVE has the potential to exist as a separate stream. However, the state needs to have a clearer policy. First of all, preparing a mechanism for quality control, the mechanism should be implemented effectively. It seems appropriate to develop TVE stream as a separate

department for which having a separate building in the schools lacking in adequacy of building is prerequisite. On the basis of equity and social justice, it does not seem appropriate to privatize the TVE stream until it gets mature enough to ensure equity and it requires redesigning the enrolment procedure. It is necessary to dig out the relationship of CTEVT with TVE which is clearly mentioned in several policy documents. These documents clearly define the role of CTEVT as a regulating and monitoring body for all the TVE programs including that of MoE and 14 other ministries.

The following table suggests the actions to be take the next:

Sn.	What?	Who?	When?	How?
1	Equity: Bring marginalized, vulnerable cohort which is at the verge of dropping out from school education into school	• Govt: Draft the policy • Line agencies: Implement them effectively	Before the beginning of the academic session	Quota and reservation system till equity is achieved in the stream. Training to the head teachers, SMC members about it.
2	Target: Production of skilled lower-level workforce or mid-level workers	Schools: Run an information dissemination seminar for the potential students on a regular basis	Before the enrolment of students	Proper dissemination, Counselling to the students and their parents, Aptitude test for identification of students' purpose
3	Plan Skill based curriculum	CDC: Revise the Curriculum focusing skill base	At the earliest	(see Table No. 13, 14 and point 6 of 9.2)
	Manage adequate	Government	At the earliest	Pooling the potential

	number of teachers			candidates, simplification of recruitment procedure, empowerment of the teachers, TITI should be made more effective (see point number 5 of 9.2)
4	Start skill based performance evaluation system	Schools and Teachers	During the course hours	Continuous assessment system should be introduced, practical assignments should be given and supervised while they perform it, level of work efficiency needs to be recorded and displayed every term, if possible monthly or weekly Recovery record of efficiency test gap should be maintained
5	Assign CTEVT the monitoring responsibility not the affiliating authority	CTEVT	During the course hours	CTEVT should handle the responsibility of monitoring and regulation,

6	Financing by GoN and generation of fund through local resources	Govt.	At the time of need	Timely release of the budget, optimum use of available local and school resources concentrating them toward income generation for the program
7	Introduce more Practical Teaching Learning process	Schools and Teachers	During the course hours	Setting up proper laboratories, maximizing the use of available physical resources of the school and availing adequate materials for practice, orientation to the teachers to make them realize the crux of TVE stream
8	Decide the OJT hours and design proper time frame	Government on the consultation of TVE teachers	At the earliest	See point number 8 of 9.2

Abbreviations and Acronyms

AD	: Anno Domini
ADB	: Asian Development Bank
BS	: Bikram Sambat
CBS	: Central Beuro of Statistics
CNI	: Confederation of Nepalese Industries
Com.	: Computer
CTEVT	: Council of Technical and Vocational Education and Training
DFID	: Department for International Development
DoE	: Department of Education
EFA	: Education for All
etc.	: etcetera
FGD	: Focused Group Discussion
FNCCI	: Federation of Nepalese Chamber of Commerce and Industries
GPA	: Grade Point Average
HRM	: Human Resource Management
HSEB	: Higher Secondary Education Board
HT	: Head Teacher

ICT : Information and Communication Technology

i.e. : that is

KOICA : Korea International Cooperation Agency

Lab. : Laboratory

Ma. Vi. : Madhyamic Vidhlaya

MMI : Multilateral and Multi-stakeholders Dialogue

MoE : Ministry of Education

MoF : Ministry of Foreign Affairs

MOST : Market Oriented Short-term Training

NCED : National Centre for Educational Development

NEB : National Education Board

NEP : National Education Plan

NGO : Non-governmental Organization

np : Nepal

NPC : National Planning Commission

ODC : Organization for Development and Cooperation

OJT : On the Job Training

org. : Organization

PCC : Policy Coordination Committee

SDC : Swiss Agency for Development and Cooperation

SDC : School Development Committee

SDG : Sustainable Development Goals

SEE : Secondary Education Examination

SIP : School Improvement Plan

SLC : School Leaving Certificate

SMC : School Management Committee

SPSS : Statistical Program for Social Sciences

SSDP : School Sector Development Plan

SSRP : School Sector Reform Plan

SWOT : Strength, Weakness, Opportunity and Threat

TEVC : Technical and Vocational Education Committee

TITI : Training Institute for Technical Education

ToR : Term of Reference

TVE : Technical and Vocational Education

TVET : Technical and Vocational Education and Training

UMN : United Mission to Nepal

UNESCO : United Nations Educational, Scientific and Cultural Oranganization

VDC : Village Development Committee

Vet. : Veterinary

CHAPTER ONE

INTRODUCTION

1.1 Background

National economic prosperity, poverty reduction and well being of the people are the major focus of current development plans of Nepal. National productivity, individual income and people's well-being are directly related to quantity and quality of education in general and technical education and skill development in particular. Low productivity, low economic growth, poverty, and poor living standards of people are major concerns of the government of Nepal.

Realizing that skill development is the key factor of economic development Government of Nepal through new Technical and Vocational Education (TVE) policy (MoE, 2012) has expressed its commitment for massive and inclusive expansion of Technical and Vocational Education and Training (TEVT) provisions to enhance human capability and income potential and to increase productivity to contribute to the national Economic development. A better-trained technician or skilled worker is not only a better citizen but also a better factor of production, source of economic growth and means of individual prosperity and wellbeing.

Skilled workers and technicians play key roles in all sectors of economy. They learn skills in a variety of ways and at different time during their life time, during employment through on-the-job training, self-study, formal or informal apprenticeships, formal training provided by the employers; and before employment in the vocational and technical institutions. TVE as a separate stream in secondary schools: one of the widely practiced approaches to skill development prior to employment. Linked with adequate employment opportunities, TVE in secondary schools can assist students to increase their skills, raise their productivity and increase

their personal incomes leading to overall raised living standards and stronger, competitive economies (King, 2007).

The growing number of youths leaving for work in overseas has been the national trends since few decades (MOF, 2013; MOF, 2015). These people either do not have the sufficient technical skills or not been able to utilize their skills in increasing income and their economic prosperity. Therefore, the current needs call for stronger connection of the education with work, youth employment and productivity improvement for the promotion of local and national economy. Provision for TVE at the secondary education widens the access to skill development opportunities to all who aspire for it and contributes to the promotion of employment and earning potential of youths,

Due to growing youth unemployment/under employment, the large portion of young people not in education, work or training is increasingly seen as a security problem (CBS, 2015). Majority of Nepalese youths blocked from the opportunities for further education, training or employment are prone to conflict, social unrest and crime, which Nepal has already experienced in the past. However, the growing young populations in Nepal are asset of the nation to promote economic productivity given that they are equipped with necessary skills and knowledge base. Therefore, TVE stream in secondary schools have been realized in increasing the balanced access to work education and training, which facilitate their transition to work and earning opportunities.

The concept of integrating vocational skills in school education was envisioned in National Curriculum Framework (CDC, 2006) followed by SSR core document, which had spelled out need to include technical and vocational education as a separate stream at the secondary level. During implementation of SSRP (MoE, 2009) career orientation and exposure

to skill development have been included at the basic education (grade 1 – 8). Subject such as "Occupations, business and Technology" introduced in grades 6-8 is an example of orienting student about occupations. SSRP also had given special emphasis for vocational preparation at the secondary level (grade 9–12) by introducing a separate stream of vocational and technical education in the secondary levels. MOE started to offer TVE programs as a separate stream in grades 9 and10 as a pilot in 100 secondary schools. In 2015 MOE decided to continue TVE separate stream in grades 11 and 12 through Higher Secondary Board. All together 92 secondary schools are offering TVE in secondary levels (grades 9-12).

1.2 Need of the study

TVE in secondary school levels have been receiving continuous policy support from the government. For example, School Sector Development Program SSDP (MOE, 2016) goal has indicated school level skill development in school education stating, "to develop basic knowledge and skills required to enjoy productive life". In order to give legal back up Eighth amendment of education Act has clearly provisioned for a separate TVE stream at the secondary level for preparing interested secondary students for world of work in order to increase their employment and earning potentials. Similarly, *t*he thirteenth national periodic plan (2013–2016) provide programs and activities for developing and strengthening TVE stream in secondary level offering choices to the students for vocational preparation. (NPC, 2013). Drawing on the lessons of SSRP, the SSDP aims to strengthen technical and vocational education (TVE) in secondary schools by introducing TVE to develop qualified and technical human resources capable of earning decent incomes. To achieve this, MoE will consolidate the technical-vocational curricula in the secondary level (classes 9 to 12) and introduce a broad National Vocational Qualification. Nepal historically and currently supports the major covenants directly related to the education

sector. It was strongly committed to Education for All (EFA) by 2015 (2001-2015) and has expressed its commitment through recent policies to the SDGs by 2030 (NPC 2015). These commitments have provided the basic guidelines for drafting the SSDP's programme and strategies for the next seven years and beyond.

Offering TVE in school, as a separate stream is not only the answer to promote employment, engage youths in productive work and reduce poverty. The quality and relevance of such programs is most important as stressed by current SSDP. To enhance the quality and relevance, relevant curricula, preparation of teachers, provisions for infrastructure and equipment, adequate provisions for institutional learning blended with work-based learning, involvement of the employers in course design, training delivery and assessment and provision for career guidance, coordination of institutional training and work-based learning including transitional services and post-training supports are some of the essential prerequisites for successful implementation of streaming scheme in secondary schools.

Department of education realized the need for improvement of TVE as a separate stream at the secondary levels. Some of the areas of improvements needed could be improving policies, improving implementation arrangements, arranging appropriate learning resources and materials, developing teachers' capacity and their management, improving the learning activities and delivery approaches, arranging work-based learning opportunity, assessing student learning achievement and skill performance.

Substantial investments have been channelized in schools that have started TVE as a separate stream in schools. TVE in grade 9 and 10 was running under the DOE and HSEB was looking after Grade 11 and 12. The eighth amendment of Education Act gave the overall management of Grade 1-12 including TVE stream in secondary levels to the Department of education. DOE has

the new challenge of streamlining and strengthening TVE stream in secondary schools. It is essential to indentify the areas, which require improvement and support to make TVE programs strong, effective and relevant. A study was felt necessary to identify areas to strengthen and improve. Since this scheme is in pilot phase, a detail study is required to examine the current status of TVE in schools, identify areas of reform and suggest ways of strengthening TVE stream in secondary levels.

1.3 Purpose of the Study

The purpose of this study is

- to assess the effectiveness of TVE program as a separate stream in secondary school level in Nepal.
- to analyze and describe current status of organizational inputs, process and policies supporting the smooth implementation of TVE stream in school
- to examine whether students are learning the knowledge, skills and competencies related to occupation of their choice and check the evidences of their learning and performance.
- to explore ways of strengthening TVE stream in secondary levels in terms of inclusive access to quality TVE programs, curriculum relevancy and implementation, physical facilities and equipment, practice-based learning activities, teacher management and policies and support mechanism associated to TVE as a separate stream in secondary levels (9-12).

1.4 Expected Outcomes

- Recommendation to improve policies and service delivery to increase program effective and improve the quality of teaching and learning in schools

- Identification and documentation of lessons learned
- Providence of practical recommendations to increase quality and relevance of the TVE as a separate stream at the secondary level facilitating a smooth transition from SSRP to the upcoming SSDP.

1.5 Global Objective

The global objective is to contribute to the preparation of better educated, trained and qualified human capital for economic prosperity of Nepal through the implementation of the technical and voc at the secondary levels under school sector development plan (MOE 2016)

1.6 Specific Objectives

1. To review policy provisions and policy implementation arrangements for promoting quality TVE accessible to secondary level students who aspire for it as a separate stream and assess the effectiveness of policy implementation in selected piloted schools.
2. To examine relevance of curriculum of TVE as a separate stream at the secondary level (9-12) in terms of preparation for employment and providing opportunity for further education.
3. To assess required inputs such as physical infrastructure, equipments, teaching materials, adequacy of qualified teachers, financing and professional supports provided for smooth implementation of TVE as a separate stream in secondary schools.
4. To assess the quality of teaching learning process such as institutional training approaches and learning activities, opportunity of practicing skills, work-based learning arrangements, and continuous assessment of learning progress including performance assessment, tools and techniques applied.

5. To assess the quality of TVE in schools as perceived by the stakeholders through the consultation, survey and collecting relevant data from records and find out ways of improving the quality of TVE as a separate stream in secondary schools.
6. To assess the effectiveness of governance, management and financing TVE as a separate stream and document the issues and challenges associated to the implementation of TVE program in schools
7. To document best practices and lesson learned and suggest ways of improving program quality and strengthening TVE as a separate stream in the secondary schools.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section talks first about TVET, International Practices, and Policies about TEV in Nepal. TVET refers to Technical and Vocational Education and Training. In Nepal it is a vital means of poverty reduction and a means to maximize social and economic benefits so that nation can improve livelihoods and lives, mainly for poor and disadvantaged population including youth and women. TEVT is the source of skills training for many individuals prior to employment and afterwards on the job. It provides entry-level skills training and skills for job advancement leading to higher productivity and earnings. It offers skills enabling workers to adapt to new technologies in the workplace and to be responsive to changing employment needs [Basnet & Basnet, 2014, pp 26]. Skills and education create social and economic benefits through enhancing civil society, providing greater opportunities and earning outcomes [Basnet & Basnet, 2014].

2.2 TVET in International Context

Several developing countries, including countries in the Asian region have a long history of TEVT. They have vocational or diversified secondary education systems. A Vocational Education Act was passed in 1927 in Philippines stating that the "controlling purpose of vocational education is to fit pupils (persons) for useful employment" (UNESCO, 1984). Malaysia established its first technical college in 1906. South Korea and Taiwan placed high priority on special vocational education at an early stage of industrialization process in the

respective countries. The very first educational development plan of Pakistan envisaged technical and commercial education as an integral part of general education, with diversification of the secondary education curriculum. The National Education Commission in Bangladesh, appointed immediately after independence, recommended in 1972 the diversification of secondary education from Grade IX onwards. China had long emphasized vocational education in its school curriculum. After 1978, quite a number of government senior secondary schools were converted into vocational schools. Polytechnic institutions, vocational schools, institutes of technical education, and technical colleges figure prominently in the educational systems in Japan, Korea, Taiwan, Singapore and India. Vocational and technical schools received serious attention in Japan even during the 19th century (Yamamoto, 1995).

2.3 TVET in Nepalese Context

In Nepal, the concept of TVET is not latest, it has long history too. In ancient Nepal the educational system was based on Hindu and Buddhist philosophy. Education was not vocational in character. Within the Hindu Varna system, vocations such as metal-works, leather crafts and tailoring were considered the work of low caste people- the Sudras. Informal training, the unorganized, unsystematic life-long process by which knowledge and skills were acquired through experience, observation and contact with peers and elders, has always played a major and traditional role in Nepal (Basnet et al, 2010). The Technical Education and Vocational Training Council Act of 1989 (amended in 1993 and 2006), established the Council for Technical Education and Vocational Training (CTEVT) an apex body for TEVT, is landmark in the history of TVET in Nepal. According to the act, the CTEVT is responsible for formulates TEVT policies, ensures quality control, develop skill standards and test the people who have

informally acquired skills, provides training to instructors involved in TEVT sector, coordinates the entire TEVT related stakeholder and provides services to facilitate TEVT programs to prepare and facilitate in the preparation of basic and middle level skilled human resources for economic development throughout the kingdom (Basnet et al., 2010).

Concept of TVET in Nepal education system appears from NESP 2028 BS. That document plan for General secondary education and vocational secondary education. One of the key educational policies regarding TVET appears in the Ninth Plan (NPC 1998: p.573) of Nepal which includes: Employment oriented education system will be developed for technical, vocational and skill development. Such education opportunities will be provided in secondary and higher secondary level. Polytechnic schools will be run to develop basic and mid-level skilled manpower. Appropriate educational curriculum will be developed for this. Similarly, The Tenth Plan which has accepted education as the primary means of overall development of the nation talks about supplying basic and mid-level skilled, technical human resources required by the country.

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

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

The challenging nature of work, changing skill needs which necessitate to skills updating affect the individual's income and the national productivity as a whole. This process of permanent change, obsolescence and up gradation has been accelerated by globalization and there is an increasing pressure on the TEVT delivery mechanisms in all countries to maintain productivity and competitiveness of their workforce. For this to happen, all modes of learning and all pathways towards productive work need to be seen in an integrated way: Learning does not always take place in the classroom: it also happens on the job, at home, and in the community- through hands on experience, volunteer work, independent study, travel.

Vocational education is a key policy in educational and skill development in Nepal after 10th Plan. Development of technical and vocational education is one of priorities of educational policies in the tenth plan (NPC 2003: p.457) by expanding Annex Programmes to increase the opportunities of technical education and vocational training by mobilizing the participation of

local elected bodies and private sector. The Tenth Plan emphasizes technical education and vocational training as one of the main strategies for human resource development, poverty alleviation as well as the meeting of skills education needs of youths and adults. The following are some of the important points mentioned in the Tenth Plan addressing the skills development needs of the poor and disadvantaged. (1) Increasing employment opportunities; (2) Promoting access of the poor and disadvantaged to employment; (3) Ensuring the rights of labourers; and, (4) Raising quality and productivity. The Tenth Plan has committed to 'impart regular (full time) training to 7,100 persons and short-term training to 23,555 persons by establishing two additional technical institutions and two poly-technical colleges; and on the basis of feasibility studies, conduct Annex programme with additional classes to provide secondary level skill-oriented education in 75 community schools, one in each district (NPC 2003, p. 455). On the whole, the Tenth Plan has made its commitment to make its efforts for upgrading quality education and increase marginalised people's access to education services. Moreover, it has emphasised to give responsibilities to local educational authorities for educational development. It has also tried to develop vocational education through schools by conducting annex programmes.

For the purpose of formulating policies, implementing and managing the newly developed Technical School System, a national level Technical and Vocational Education Committee (TEVC) was formed in 1982.The Directorate of Technical and Vocational Education (DTVE) was established in the same year as a division of Ministry of Education. Furthermore, after the realization of the need for a unified structure for coordinating, developing and strengthening TEVT in Nepal, the Council for Technical Education and Vocational Training Act, 1989 established the Council for Technical Education and Vocational Training (CTEVT) in Nepal.

Further, the Council for Technical Education and Vocational Training (CTEVT) constituted in 1989 (2045 BS), is a national autonomous apex body of Technical and Vocational Education and Training (TVET) sector committed to the production of technical and skilful human resources required by the nation. To operationalize TVET, CTVET under Ministry of Education is operating through coordination and collaboration of national and international agencies, donors, (I/NGO), technical service providers and social as well as private organizations.

Then, to expand the physical facilities and institutional capacity of TVET in Nepal, CTEVT has developed relations and linkages with development partners. As a result, Asian Development Bank (ADB), Swiss Agency for Development and Cooperation (SDC), Department for International Development (DFID previously known as Organization for Development and Cooperation- ODC), United Mission to Nepal (UMN), Government of Denmark, Government of India, Government of China, KOICA and others have contributed in establishing technical institutes and expanding their capacity.

The contribution made by the partners include: Colombo Plan Staff Colleges for Technician Education, an Inter-governmental International organization for human resources development in Asia and the Pacific Region established in 1969. CPSC was founded by 26 countries, including Nepal but, at present, there are 17 member countries.CPSC's programs and services are primarily intended to equip TVET personnel in the member countries including Nepal with up-to-date knowledge and skills in various areas of interest. CPSC is the only regional institution established specifically to enhance the quality of TVET; CPSC provides leadership in this regard by designing and conducting various programs and courses in different levels.

CTEVT as a member organization of this organization has established regular linkage in the field of human resource development. Asian Development Bank (ADB) has made significant contribution to develop and expand TVET in Nepal by establishing many technical schools under CTEVT system in various regions of Nepal. The first contribution of the bank was to support for establishment of Lahan Technical School in 1983 through Sagarmatha Integrated Project. Later on, the bank supported establishing and upgrading technical schools through Technical Education and Vocational Training (TEVT) Project: In addition, the bank has supported strengthening the capacity of human resource of CTEVT providing training and higher education opportunities.

Moreover, the bank at present is supporting Skills Development Project (SDP) providing Market Oriented Short-term Training (MOST), particularly to the women, Dalits and the disadvantaged communities of Nepal. Swiss agency for Development and Cooperation (SDC) has played a vital role in upgrading and expanding TVET programs in Nepal by establishing Technical Schools since CTEVT was established.

To conceptualize and internalize TVET at all horizontal and vertical levels among all categories of people among governmental, social and private organizations, political and beneficiary levels for making citizens skilled, we should plan to review and reform national TVET Policy 2012 aligned with Constitution of Nepal (2015), its federalization and different related policies.

Urgently the Ministry of Education and CTVET aligned with concerned line ministries, private sector (FNCCI, CNI,) NGO Federation, Journalist Federation, other technical service providers and other social and political organizations should be actively engaged through TVET

Multilateral and Multi-stakeholders Dialogue (MMD) Process to bolster TVET opportunities from effective management.

Further, for making conducive co-ordination among public and private sector service provider institutions there are diverse opportunities. So multiple partners should collaborate for TVET management to succeed in a larger and massive scale for making skilled Nepalis for enhancing economic growth and social prosperity of Nepal.

The Government of Nepal developed TVET Policy (2012) with the aim of providing national TVET guidelines for systematizing TVET provisions in Nepal. For coordination with TVET sector actors, the government formed TVET policy coordination committee (PCC) in May 2015. This committee is chaired by MOE where secretaries from line-ministries, together with representation from the Federation of Nepalese chambers of commerce and Industry (FNCCI) and the confederation of Nepalese industries (CNI) are members.

The main objectives of TVE policy (2012) includes: Expanding access and ensure inclusion, Ensure quality and relevance, Coordination for institutional arrangements and information management

Due to growing youth unemployment/under employment, the large portion of young people not in education, work or training is increasingly seen as a security problem (CBS, 2015). The new constitution of Nepal (2015) has underscored the importance of TVET as a means to prepare skilled and competent human resources (including Dalits and disadvantaged) for economic development. Majority of Nepalese youths blocked from the opportunities for further education, training or employment are prone to conflict, social unrest and crime, which Nepal has already experienced in the past. However, the growing young populations in Nepal are asset of the nation

to promote economic productivity given that they are equipped with necessary skills and knowledge base. Therefore, TVE stream in secondary schools have been realized in increasing the balanced access to work education and training, which facilitate their transition to work and earning opportunities.

The concept of integrating vocational skills in school education was envisioned in National Curriculum Framework (CDC, 2006) followed by SSR core document, which had spelled out need to include technical and vocational education as a separate stream at the secondary level. During implementation of SSRP (MOE, 2009) career orientation and exposure to skill development have been included at the basic education (grade 1 – 8). Subject such as "Occupations, business and Technology" introduced in grades 6-8 is an example of orienting student about occupations. SSRP also had given special emphasis for vocational preparation at the secondary level (grade 9–12) by introducing a separate stream of vocational and technical education in the secondary levels. MOE started to offer TVE programs as a separate stream in grades 9 and10 as a pilot in 100 secondary schools. In 2015 MOE decided to continue TVE separate stream in grades 11 and 12 through Higher Secondary Board. All together 92 secondary schools are offering TVE in secondary levels (grades 9-12).

School Sector Development Program SSDP (MOE, 2016) goal has indicated school level skill development in school education stating, "to develop basic knowledge and skills required to enjoy productive life". In order to give legal back up Eighth amendment of education Act has clearly provisioned for a separate TVE stream at the secondary level for preparing interested secondary students for world of work in order to increase their employment and earning potentials. Similarly, *t*he thirteenth national periodic plan (2013–2016) provide programs and activities for developing and strengthening TVE stream in secondary level offering choices to the

students for vocational preparation. (NPC, 2013). Drawing on the lessons of SSRP, the SSDP aims to strengthen technical and vocational education (TVE) in secondary schools by introducing TVE to develop qualified and technical human resources capable of earning decent incomes. To achieve this, MoE will consolidate the technical-vocational curricula in the secondary level (classes 9 to 12) and introduce a broad National Vocational Qualification. Nepal historically and currently supports the major covenants directly related to the education sector. It was strongly committed to Education for All (EFA) by 2015 (2001-2015) and has expressed its commitment through recent policies to the SDGs by 2030 (NPC 2015). These commitments have provided the basic guidelines for drafting the SSDP's programme and strategies for the next seven years and beyond.

Offering TVE in school, as a separate stream is not only the answer to promote employment, engage youths in productive work and reduce poverty. The quality and relevance of such programs is most important as stressed by current SSDP. To enhance the quality and relevance, relevant curricula, preparation of teachers, provisions for infrastructure and equipment, adequate provisions for institutional learning blended with work-based learning, involvement of the employers in course design, training delivery and assessment and provision for career guidance, coordination of institutional training and work-based learning including transitional services and post-training supports are some of the essential prerequisites for successful implementation of streaming scheme in secondary schools.

Department of education realized the need for improvement of TVE as a separate stream at the secondary levels. Some of the areas of improvements needed could be improving policies, improving implementation arrangements, arranging appropriate learning resources and materials, developing teachers' capacity and their management, improving the learning activities and

delivery approaches, arranging work-based learning opportunity, assessing student learning achievement and skill performance.

Substantial investments have been channelized in schools that have started TVE as a separate stream in schools. TVE in grade 9 and 10 was running under the DOE and HSEB was looking after Grade 11 and 12. The eighth amendment of Education Act gave the overall management of Grade 1-12 including TVE stream in secondary levels to the Department of education. DOE has the new challenge of streamlining and strengthening TVE stream in secondary schools. It is essential to indentify the areas, which require improvement and support to make TVE programs strong, effective and relevant. A study was felt necessary to identify areas to strengthen and improve. Since this scheme is in pilot phase, a detail study is required to examine the current status of TVE in schools, identify areas of reform and suggest ways of strengthening TVE stream in secondary levels.

CHAPTER THREE

APPROACH AND METHODOLOGY

3.1 Research Design

In consistent with the methodology conceived in the TOR, this study will be a descriptive study, which will analyze and describe the existing situation and implementation effectiveness of TVE programs as a separate stream in selected secondary schools. It also documents information on facilitative support from the centre, district level support and monitoring the progress, and school level performance in arranging required inputs and process necessary students to learn technical knowledge, occupational skills and achievement of employable competencies.

This study is mainly a qualitative study supplemented by quantities information. In this sense, descriptive research is the suitable approach as it does not fit neatly into the definition of either quantitative or qualitative research methodologies, but instead it can utilize elements of both, often within the same study.

3.2 Sources of the Data

Both primary and secondary sources of information were used in response to the specific objectives of the study. Therefore, main sources of data for this study were:

3.2.1 Secondary Sources

Government documents, published reports, official records at the district and school level, implementation directive issued by the MOE and curriculum and learning materials being used in the programs;

3.2.2 Primary Sources

(a) Qualitative information was generated through interviews and focus group discussion from Head teachers, Teachers, students from TVE stream, SMC members, officials from district education office

(b) Consultation with central level agencies such as MOE, DOE, CDC, TVE and members expert committee of 9-12 curricula was done.

(c) Data were obtained from structured or semi-structured survey of selected schools of selected districts.

3.3 Sample of the Study

As per the criteria mentioned in the ToR, 30 schools are required to be selected for the study. So, from among the five streams of study and the schools running TVE from grade 9 to 12, thirty schools have been selected for the study stream wise as the sample (Appendix A). However, this selection is not based merely on the classes being run and the streams to be included but also the ecological zones have also been taken into account.

From among the schools selected, once again, based on the classes run, streams offered and ecological zones, out of the 28 surveyed school, 15 schools were selected for the in-depth study in consistent with the aspiration of the TOR.

Furthermore, out of the 15 schools where in-depth study was carried out, representing every program of study, five schools were chosen and their case-study was carried out for the purpose of finding out the best practices. The program of studies covered was:

i. Animal Science -1

ii. Plant Science - 1

iii. Civil Engineering -1

iv. Computer Engineering - 1

v. Electrical Engineering -1

3.4 Tools for Data Collection

Various tools for collection of data will be designed. The major tools that were deployed in this study were (Appendix C, D, E, F):

A. Interview

B. Observation

C. Focused Group Discussion

D. Structured and Semi-structured Survey Questionnaire

3.5 Data Analysis

3.5.1 Quantitative Data Analysis

The collected data was tabulated and using the descriptive statistical tools and with the help of Excel Spread Sheet and SPSS, the data were analyzed in consisted with the specific objectives specified in the study.

3.5.2 Qualitative Data Analysis

a. Data Reduction

b. Data Display

c. Deriving Meaning

Conceptual Framework

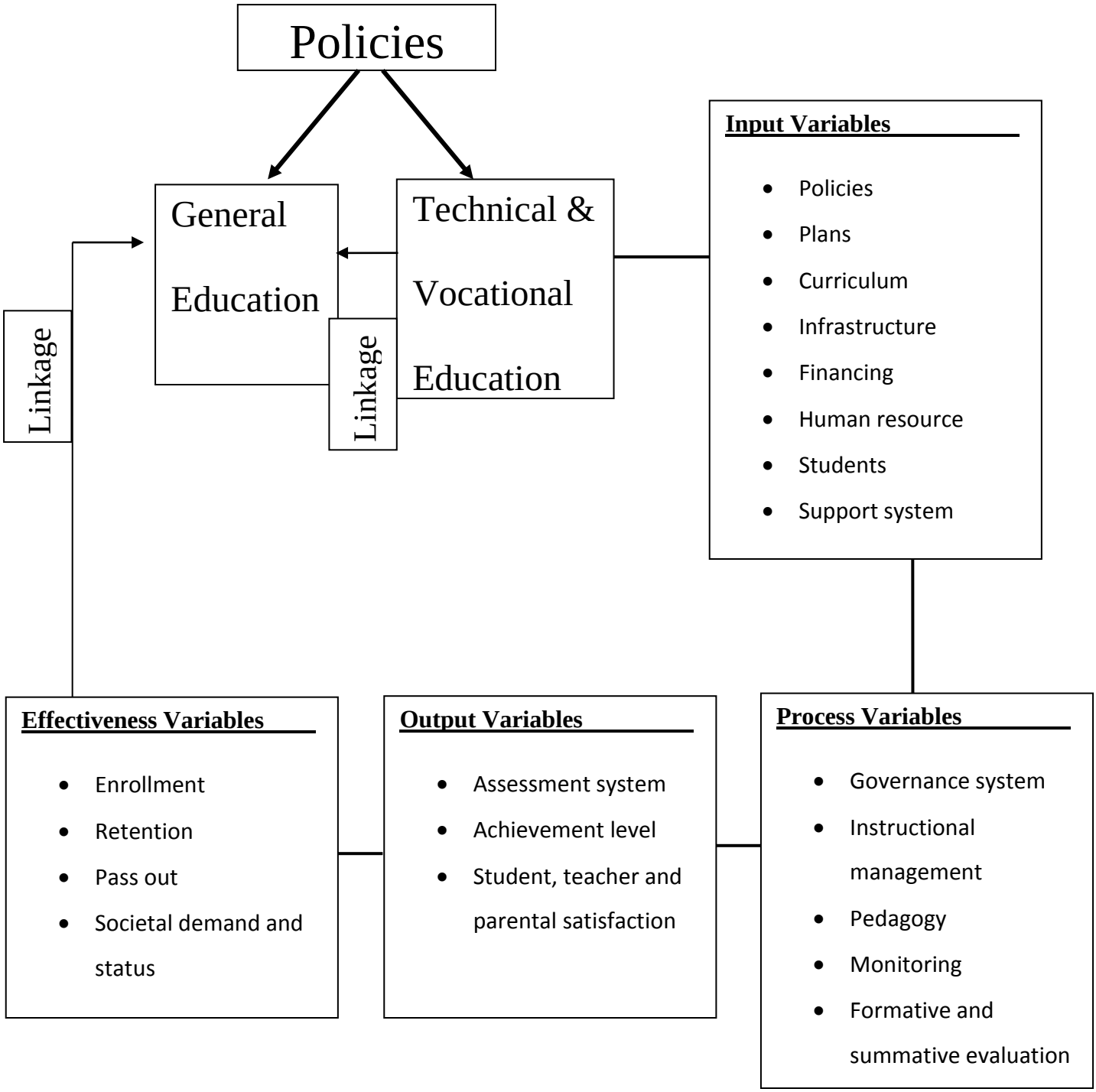

Figure 1*:* Conceptual Framework

CHAPTER FOUR

PRESENT STATUS OF TVE SCHOOLS

4.1 Input

Input is the basic element in a system without which the system is something like an empty vessel. Therefore, in the process of analyzing the collected data, a system theory has been deployed under which input, process and output/result has been taken as the setting off point to evaluate the TVE context of Nepal especially focusing on the concept as conceived by SSDP.

4.1.1 Student Enrolment in Sampled Schools 2073

All together twenty eight schools were sampled on the basis of purposive sampling so as to incorporate all the TVE streams run in the different region of the country. In this process, ecological belts, development regions and newly introduced provinces were taken into account. The total number of TVE students enrolled in these schools has been shown in the following diagram:

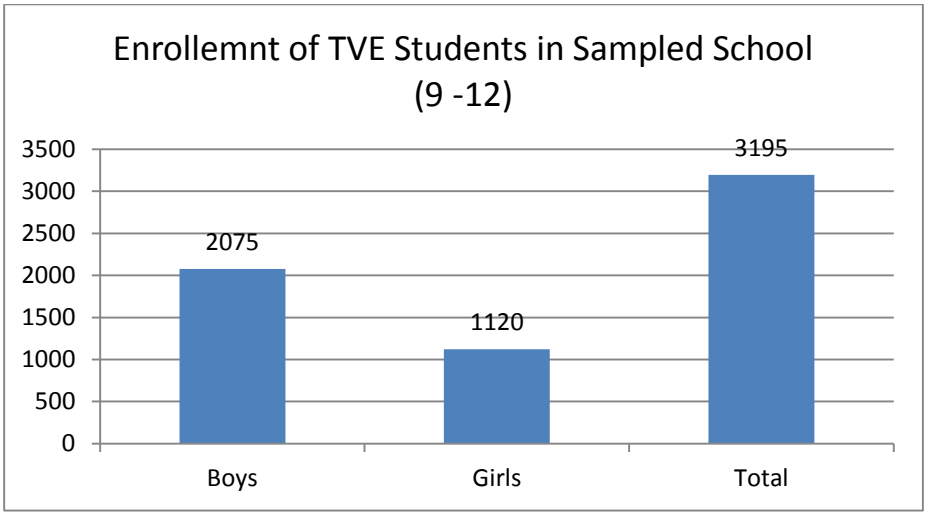

Figure 2: Enrolment of TVE Students in Sampled Schools

Based on the quota provided to each school to teach the students in TVE schools, it was found that the flow was good and almost all the sampled schools were found have the quota fulfilled. However, some schools in Terai region were found to struggle in term of enrolling the students according to the quota provided. Though they say that they have utilized maximum efforts to attract enrolment, it appears that they have not been able to convince the parents about the importance of TVE stream.

4.1.2 Gender-wise TVE Students

The study had collected data on the basis of male and female students' enrolment in TVE schools for the last four years. The following chart shows the number of male and female students in the sampled schools:

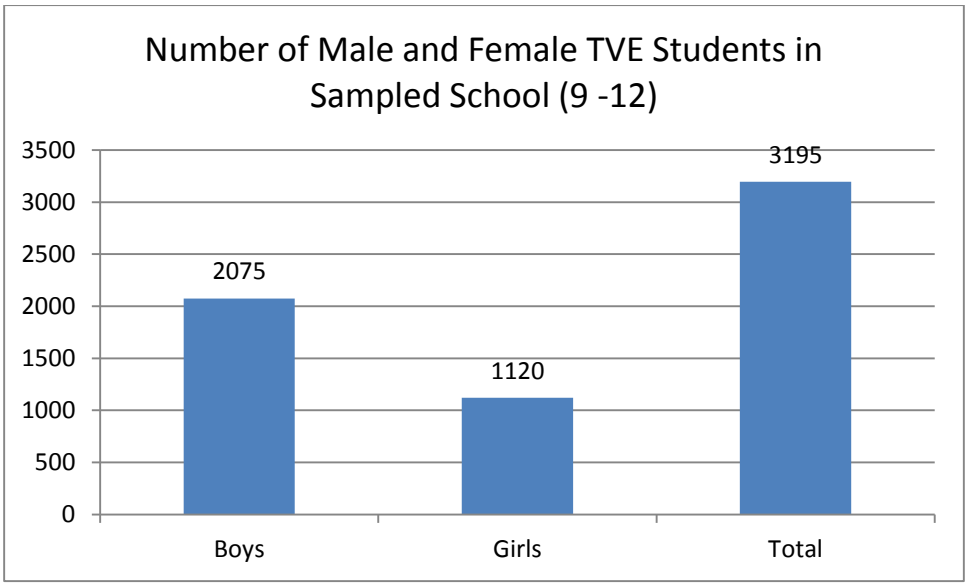

Figure 3: Name of male and female students in TVE schools

The chart shows that the number of students enrolled in the TVE schools in sampled schools was nearly 3200 consisting of 2075 boys and 1120 girls. The number of girl students in TVE schools was found comparatively low consisting only 36% to that of 64% boys. It may be worthwhile to

conclude that the TVE stream in schools is more popular among the male students than female students.

4.1.3 Dalit & Janajati TVE Students 2073

The study sought the answer to the question what number of *dalit* and *janajati* students was enrolled in the TVE schools for the last four years. It was found that nearly 9% of the total students enrolled in this stream from grade 9 to 12 were dalit and nearly 19% of the same were *janajati*. Based on the population of these ethnic groups, the number can be considered satisfactory. The composition of these students has been furnished in the following bar graph.

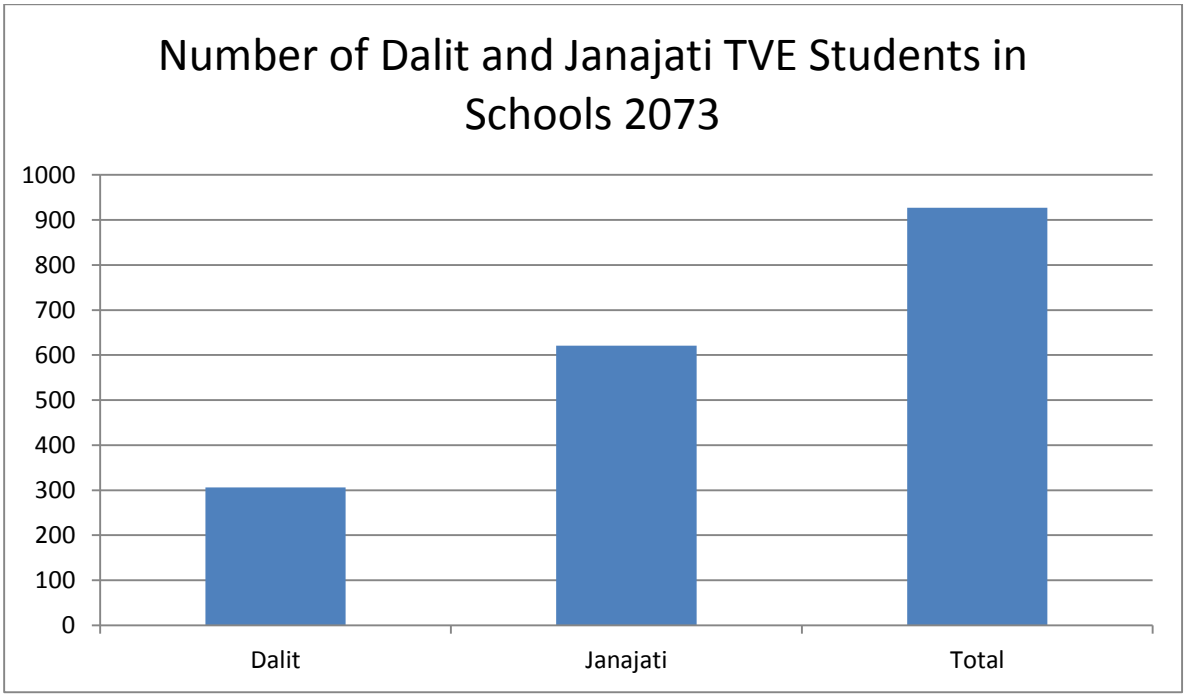

Figure 4: Number of Dalit and Janajati students in TVE Students

4.1.4 Teachers / Instructors

Most of the schools running TVE stream were found to have teachers with required qualification. However, the teacher appointment procedure was found to be tedious and expensive as every vacancy is to be announced in one of the daily newspapers. Comparatively this procedure is easier in the urban areas than in the rural areas. In the rural areas, it was found that there was high scarcity of qualified manpower appropriate for TVE stream.

> *"Taking to teaching after obtaining such a degree somehow signifies that we are incapable professionals in the perception of the society. Something must be done to change this perception."*
>
> *"Of course, social perception about our teaching is de-motivating on. But if the program is disseminated well and established it as a stream to be taught only by professionals like us, the social perception can be changed. The society does not take this steam as a different program but just like the general one."*

The noteworthy point to be mentioned here is that the schools have been able to appoint the teachers of proper qualification but retaining them for a long term is a severe problem in most of the TVE schools. Some of the schools were found to experience repeated teacher turnover, as many as 3 times for the same subject in an academic session.

Almost all the teachers teaching this steam are untrained. Nor have they got any opportunity for training. Very nominal number was found to have 10 days training which they think was not sufficient.

On the basis of the interview with some of the existing teachers, it was found that they were victimized by low morale for being a teacher despite having such an acclaimed qualification like B. E., Vet. Doctor, Com. E. etc. as they said the society has different expectations from them.

One of the teachers says, “Taking to teaching after obtaining such a degree somehow signifies that we are incapable professionals in the perception of the society. Something must be done to change this perception.” In answer to the same question, another female teacher from different regions comes out with a solution, “Of course social perception about our teaching is de-motivating. But if the program is disseminated well and established it as a stream to be taught only by professionals like us, the social perception can be changed. The society does not take this steam as a different program but just like the general one.” Besides this, the teachers were found to have the following expectations:

- Separate TVE department in schools
- Their representation in school management
- Environment to use the technical knowledge
- Different identity of TVE steam as it got mingled with the general steam
- Transparency in HT’s activities, team work
- At least, basic facilities and pay as that of the permanent teacher of general stream
- Monitoring and supervision of school activities by higher authority
- Stability as a teacher
- Availability of license
- Timely refreshment and pedagogical training

4.1.4 Infrastructures of the Schools

Another of the major input for the quality teaching learning activities is infrastructure of the school. In the process of looking into the existing infrastructure of the sampled TVE schools,

land, building, playground, furniture, laboratory, library, etc. were evaluated; the brief description of the same has been highlighted under the following subheadings:

- **Land:** Almost all of the sampled schools were found rich in term of possess of school-owned land. The minimum amount of land possessed by a TVE schools is 2.10 Bigaha in the Terai region and 3 Ropani in Hilly region. The schools with the possession of less amount of land are facing problems in expansion of physical facilities and students are deprived of open space for the purpose of playground. More than 95% of the sampled schools were found to have ample amount of land for different purposes. They have spacious playground, room for expansion and land for cultivation. This property has been income generating resources of many schools through which some of the schools are making as much as 25 lac rupees worth income every year.
- **Playground:** As seen above, there are very few schools with congested playground.
- **Building (TVE purpose):** No schools were found to construct separate building for the purpose of running TVE stream. However, construction of annexed room was common in most of the schools, which was managed under the system of departmentalization. The buildings were concrete ones and were in workable condition except the ones which were severely affected by the latest earthquake. Shree Padma Secondary school at Bhaktapur was one of such schools which had badly damaged buildings. The construction work was rapidly in progress when it was visited for the purpose of data collection. The schools of Terai belt were found to have a lot of complaints about the infrastructure. They said they did not have proper windows and doors. The grilling was not done on the windows. There were students for hostel but they did not even have basic hostel facilities due to lack of proper building.

- **Adequacy:** As said above, though the schools running TVE stream do not have separate building for the purpose, most of them said they did not have space problem for running TVE stream. However, a few schools whose buildings are in poor state are having problem in running the stream. Since many labs are the demand of the TVE stream, lack of spacious building with good number of rooms appears one of the basic requirements.

- **Water Supply:** Water supply provision was looked into through two lenses: drinking purpose and irrigation purpose. The schools which are running plant science require irrigating their field in different seasons. Naturally, rain cannot be expected every season and there is poor irrigation system in the context of Nepal. So the school which is running Plant science demanded a pump set so that they could increase the cultivation.

  Majority of schools have very good drinking water facility. Some of the Terai schools pointed out to the need of improvising the drinking water facility.

- **Restroom:** In term of restroom, the following findings were made in the sampled schools:

Table 1: Restroom Facility in Sampled Schools

Available Restroom Facility	**No. of School with facility**	**No. of school without Facility**
Availability of restroom	28	0
Adequacy of restroom	24	4
Separate for male and female	24	4
Separate for teacher and students	26	2
Sanitary pad deposit point in female restroom	13	15
Provision of soap and water in the restroom	17	11
Separate urinary and pan	22	6

(Source: Field Data 2017)

The table shows that majority of schools have the basic restroom facility. However, sanitary pad deposit point in female restrooms and availability of soap and water is poorer compared to other available restroom facilities.

- **Library:** All the sampled schools were found to have a library. The report found the following in term of libraries in the TVE schools:

Table 2 :Libraries in TVE Schools

Condition of library	Well Managed: 18.52%	Workable: 62.96%	Mismanaged: 18.52%
Newspaper and journals	Have : 66.67%	Do not have 33.33%	*Though they said they have journals, the schools did not mention the name of the journals.*
Reference books of the concerned subjects	Sufficient: 29.23%	Insufficient: 70.37%	*Majority of TVE schools do not have sufficient reference books of concerned subject.*
Availability of textbooks of the concerned subjects	Have: 7.41%	Do not have 92.59%	*Textbooks have not been developed by MoE yet. Teaching learning is based on curriculum.*
Condition of Library Management	Excellent 11.11%	Workable 44.45%	Below Average 44.44%

(Source: Field Data 2017)

On the basis of the details in the table, the following things were found:

- **Condition:** Majority of the schools have workable library facilities. 18.52% of the TVE schools have very good library facility while the same percentage of

schools has very poor library facilities. The research team visited the library of each sampled TVE schools but found none of the schools manage them properly.

- **Relevancy:** Though they said they have journals, the schools did not mention the name of the journals. Majority of TVE schools do not have sufficient reference books of concerned subjects. Textbooks have not been developed yet. Teaching learning is based on curriculum but it is interesting to note here that nearly 7% of the schools claimed to have textbooks for the steams they are running.
- **Access:** The research team sought to find out the status of students' access to the library. In this regard, the interview with the students revealed the following facts:
    - There is a library but its management is very poor. We have not been able to take advantage from the library.
    - It does not open. Required books are not available in the library.
    - The library opens two to three times a week but we cannot use it properly as neither there are required books nor any reference materials supporting our stream.
- **Newspapers:** Newspaper is one of the most important tool keep people informed and keep pace with the change taking place in the society and nation every day. Therefore, availability of newspaper definitely helps teachers; head teachers and students gain additional knowledge to help enhance their teaching learning activities. For this reason, the study team sought to find out the status of subscription of newspapers and magazine by schools. The following table shows the status:

Table 3: Percentage of TVE schools subscribing different newspapers

Newspapers	**Yes**	**No**
Daily	78%	22%
Weekly	26%	74%
Monthly	85%	16%

(Source: Field Data 2017)

As seen in the table, 78% of the schools have subscribed daily newspapers and the Gorkhapatra and the Kantipur, local dailies were found the most commonly subscribed newspapers. Another of the most commonly subscribed monthly magazine is the Shikshak., which was found to be subscribed by 85% of the schools. The Shaptahik is the most commonly subscribed weekly newspaper. This activity shows that most of the TVE schools are conscious about the importance of the use of newspapers and magazine in teaching learning activities. Besides these, information related with the TVE can reach easily to nearly 80% of the TVE schools if any published in them.

- **Furniture and Equipments**

It is well understood that furniture is one of the major input for the quality academic activities. To assess the status of furniture and equipments in TVE schools for different purpose, the questionnaire included a table intending to find out whether the TVE schools have sufficient/adequate furniture for classroom, office, library and lab use. The following table shows the status of furniture and equipments in the sampled schools:

Table 4: Status of furniture and equipments in TVE schools (%)

Sn.	Furniture/Equipments	Classroom use		Office Use		Library Use		Lab Use	
		Sufficient**	Insufficient*	Sufficient	Insufficient	Sufficient	Insufficient	Sufficient	Insufficient
1.	Desk	92.6	7.4	70.4	29.6	70.4	29.6	70.4	29.6
2.	Bench	92.6	7.4	70.4	29.6	70.4	29.6	70.4	29.6
3.	Table	66.7	33.3	66.7	33.3	66.7	33.3	66.7	33.3
4.	Chair	63	37	100	0	63	37	63	37
5.	Cupboards	63	37	63	37	63	37	63	37
6.	Rack	66.7	33.3	66.7	33.3	66.7	33.3	66.7	33.3
7.	Notice board	66.7	33.3	66.7	33.3	66.7	33.3	66.7	33.3
8.	White Boards	70.4	29.6	70.4	29.6	70.4	29.6	70.4	29.6
9.	Computer	59.3	40.7	59.3	40.7	59.3	40.7	59.3	40.7

(* *No disturbance in work, * Disturbance in work)*

(Source: Field Data 2017)

Most of the sampled TVE schools were found rich in term of possession of basic required furniture. However, some of the schools do not even have sufficient whiteboards and desk and benches in the classrooms, tables and chairs are lacking in the classroom and computer labs are suffering from inadequacy of required number of computers.

- **Energy:** Though almost all of the sampled TVE schools were found to have electricity supply, they said they are suffering from the load shedding problem. Therefore, they are forced to manage alternative energy resource. But only 66.7% of the sampled TVE schools have somehow managed to instill alternative energy resource in the schools; most common among them were inverters and solar energy. 33.3% of sampled TVE schools have not yet got any dependable alternative energy resources. Its direct affect was found in the lab activities. Be it Computer Engineering, Civil Engineering or Electrical Engineering, none of the programs could be run effectively.
- **Laboratories:** Lab is the soul of any TVE stream. For this reason, the questionnaire sought to find out the status of lab in TVE schools. The present status of the lab in sampled schools has been shown in the following table:

Table 5: Status of Laboratory in TVE Schools

		Below Average	Average	Excellent
1	Furniture	39%	42%	19%
2	Equipments	44%	39%	18%
3	Alternative Energy Supply	34%	48%	18%
4	Water Supply	21%	32%	37%

(Source: Field Data 2017)

On the basis of the available facilities as mentioned in the table, the labs were categorized into three groups: Below Average, Average and Excellent. The lab in most of the sampled TVE schools was found average. There are many TVE schools which still do not have adequate number of furniture, required equipments, supply of alternative energy and

water. In this pretext, the research team tried to evaluate the status of lab in connection with the following:

- **Relevancy:** The laboratories in most of the schools seem relevant for the Grade 9 and 10. Most of them cannot provide for the practice need of the TVE students.
- **Adequacy:** Once again, the materials available in these labs, furniture and space may be considered adequate for the lower grades of secondary level but they need instillation, widening, and adding up to incorporate the students from higher grades of secondary level.
- **Access**: The students have mixed experience about the access to the laboratory. Untimely opening and closure was pointed out by the students.

4.1.5 Academic Publications

The status of academic publication in TVE schools has been shown in the following table:

Table 6: Status of academic publication in sampled TVE Schools

Publications	% of Schools
Strategic Planning	81.48%
Wall Magazine	33.33
Souvenir	44.44
Annual Calendar	85.19

(Source: Field Data 2017)

Academic publicans play important role in the process of knowledge increment of the students. TVE schools were also found to realize this fact and initiate publication. Most of the sampled schools were found to have strategic planning. Only round 19% of the schools were found not to

have strategic planning. Similarly, wall magazine publication culture was found in nearly one third of the school and souvenir publication a little higher than wall magazine. Most of the TVE sampled school had their own annual academic calendar.

4.1.6 Academic Planning

Success of an academic program depends on how well it is planned. With this view in mind, the research team sought to find out different aspects included in the planning. The following table shows the percentage of the sampled TVE schools having planned activities:

Table 7: Planned activities in the sampled TVE schools

Academic Activities	% of Schools
SIP	96%
Annual Plan	81.48%
Lesson Plan	55.6%
Continuous assessment	70.4%
Students' Cumulative Record	55.6%
Practical Classes	87.2%
Use of Specification Grid in Preparing Question Paper	51.9%
Answer Key	40.7%
Opportunity for Learning by Doing	59.3%
Efficiency Test	44.4%

(Source: Field Data 2017)

The table shows that almost all of the TVE schools have SIP and most of them have Annual Plan. However, despite the fact that lesson planning is one of the basic components of teaching learning activities, nearly half of the sampled TVE school have not practiced lesson planning before teaching. Compared to lesson planning, continuous assessment was found more

satisfactory but it is yet to be implemented by many schools. Students' Cumulative Record keeping another of the component which needs to be improved as it is found that many schools have no system of cumulative record keeping. Nearly 90% of the schools were found to conduct regular practical classes in planned way, the left out nearly 10% cannot be considered a marginal percentage as practical work is where the crux of TVE education lies. Slightly above 50% of the school use specific grids while designing questions for internal examinations like unit tests, terminal examinations and others but only 40% of the sampled schools have the system of developing answer key for evaluating the students' paper after examination. Some of the teachers defended that it was not prepared because the teacher who designs the questions himself/herself evaluates the students' paper. Though nearly 60% of the total sampled schools have availed the opportunity to learning by doing, only nearly 45% of the sampled schools have the tendency to evaluate students' work efficiency.

4.1.7 Instructional Material

Most of the sampled TVE schools are suffering from the lack of teaching materials. The discussion with the teachers about the problem revealed the fact that most of the teachers come from the non-teaching background. They have neither got proper training nor proper teaching qualification in education. They have very little or no skills in the development of teaching materials.

- **Availability of basic materials and equipments:** Majority of schools were found to have basic teaching materials like white board, blackboard, marker, chalk, power point projector, duster, etc. Besides these, they even do not have enough readymade teaching materials in the TVE schools. The equipments and materials available in the lab can be

sometimes used as teaching materials bringing them into the classroom. Even these materials are not available in many of the sampled schools.

- **Conditions of materials:** Majority of available teaching materials is in useable conditions and most of them are at least three years old. New and updated materials are found rarely.

4.2 Instructional Procedure

As conceived by the policy, the evaluation scheme of the students of this stream is sixty forty. Therefore, so was expected from the teachers in their instructional procedure. But in majority of the sampled schools did not meet the expectation. However, most of the schools were found to allocate at least two days of a week for practical works in the field or in the lab.

4.2.1 Adopted instructional technique: Majority of the teachers were found to adopt traditional lecture method in teaching learning activities. One of the major finding of the report is that nearly all of the schools have projectors but it is less frequently used in majority of schools. In the schools of urban area, power point presentation is common but in the rural areas, the students are manoeuvred mostly through lecture method. Though the policy indicates that the TVE teachers are provided with a laptop, majority of teachers are still waiting to be equipped with this policy statement. Therefore, they have an excuse that they have to depend upon the lecture method most of the time. Most of the teachers dictate note to the students but in some of the schools, the students are so poor in English language that they neither understand the pronunciation nor are they capable of writing the spelling of the worlds dictated by the teachers. Therefore, in majority of cases, the teachers are forced to use translation method in teaching learning activities, which the teacher say, cannot carry the concept at the fullest. Except for the

field and labs, the students were rarely found to exposed to group works and problem solving. Though some of the urban schools have interactive students, majority of the schools do not have interactive students in the classroom of TVE schools. This seems to keep the classrooms from being interactive.

Since the lesson planning has not been introduced in the majority of TVE schools, planned teaching was hardly witnessed. When asked about planning, they said they have yet to develop lesson planning competencies. However, most of the courses were found to be manoeuvred based on the crux of the curriculum.

Another major component of instructional procedure is the classroom management, which is also the skill learned through formal academic teachers' courses or from a long term teaching experiences. Both of these aspects were found missing in the case of majority of TVE teachers. Therefore, there was mediocre classroom management. It could be perceived that the management was not the effort of the teachers but the willingness of the students themselves.

Student centred teaching was hard to find out. Nearly 90% of the teaching learning activities were found to revolve round the teacher him/herself. Depending upon the levels of students' capacity and gravity of content, differentiated instruction could have been a key to this problem. But the term itself is huge for majority of teachers. So, student centred learning is still a dream for many of the TVE schools.

Assessment of learning was rarely done. Nor was linkage with the previous day's learning found to be created. Majority of teachers, without warm up activities, directly entered into the lesson. Therefore, the learning process was sensed to fade way after 20 minutes of teaching. While the classes were being observed, the teachers were found so engrossed in the lecture and dictating

that they hardly took out time for evaluation of the day's teaching. So, it can be concluded that, in majority of TVE schools during class assessment of learning hardly takes place.

Since learning assessment was found a rarest of the phenomena, feedback mechanism in the classroom teaching could not be witnessed. So most of the learning is taking place without immediate feedback.

Homework was found to be given to the students in majority of the schools. But instant homework checking and providing feedback was rarely done. However, the students said that sooner or later, at least given homework was checked.

4.2.4 Practical Activities

Table 8: Details of Practical Activities

How	Two forms of practical activities were found to be conducted in most of the schools: in lab and in the field. Since the OJT prevails in confusion, uniformity of its implementation is yet to be determined.
When/ How Long	More focused practical works are aspired to be done in the form of OJT at the end of Grade 10 and Grade 12 but it is in too confusing sate. While most of the schools were found to conduct this activity twice a week, either in field or in the lab but once again, there is no uniformity among schools in the process of implementing it.
Learning Opportunities	Most of the students of sampled schools complained there they had little or no learning opportunity practically. They did not have learning by doing opportunity.
Lab Works	Most of the sampled schools were found to assign certain hours of a week for lab works. However, the labs lack in relevancy and adequacy for all students' need.

	Therefore, the lab works are irregular, customary and lacking in opportunity in learning by doing.
Field Works	Except the Computer Science, all other four streams have created opportunity for field works. The pathetic part of these field works is they are hardly supervised, recorded and supported with immediate feedback. Despite the fact that many schools have abundant of resources for animal science and plant science. But these resources remain unused thereby decreasing the potential of effective field works.

4.3 Summary of School-wise Findings about TVE Stream

The following table summarizes the findings about TVE stream

Table 9 : Summery of school-wise findings about TVE stream

Schools	**Saraswoti Higher secondary school, Dang, Deukhuri- Govardia Dang**	**Dhamboji Higher secondary, Banke**
Streams	**Plant science**	**Computer Science**
Gist of Findings	• As per need of society • Model school of dang • Excellent Leadership • 84 Bigha- land • Greenery as school boundary • Active students participation in all activities • Need for additional teachers quota	• 48 seat is not enough [some threats her for suicide, if not get chance • DEO, Minister Pressure for admission • General stream- 1700-2000 • Around 200 • Automobile service – for

	• But Excellent HRM • General stream- 1000 • Around 200 • Possibility for technical and vocational university, so is the dream of HT • Good, if they get Animal science stream too as per need of society • Need of • Water supply problem for irrigation so demanding good pump set for irrigation • HT incentive is not enough to get motivated to look after TVE (additional load) • 48 seat is not enough [100 can be fulfilled] • Extra monetary resource – VDC, School Internal	SLC fail- Rojgar • No greenery • Lab –proper • Library –Problem • Lack of teacher quota • Active student participation • Leadership excellent • Teachers training- • Lack of reference book\ • Lack of specification grid • Lack of teachers manual • 6-12- computer for all • Student manual • Lack of Practical activity • OJT problem • Extra monetary resource - School Internal source
Schools	**Panchadeval Higher secondary , Mehalmudi, Kalikot**	**Durga Laxmi secondary school, Attariya, Kailali –**

		weak
Streams	**Computer science**	**Computer science**
Gist of Findings	• Active community participation • Physical infrastructure sufficient • No light in class room/ no fan • No proper toilet • NO/ drinking water facility • Sufficient Lab/ • No monitoring and supervision by School inspector/ upper level • High demand for teachers quota/ managing by local resources • Young energetic intellectual youths in SMC • Zero presence of government officials • Positive thoughts and attitude of students towards	• Student Active participation • Physical infrastructure sufficient • Internal management weakness – conflict between technical and non technical teachers • Sufficient Lab/ • No proper use of materials-com • High demand for teachers quota/ managing by local resources • ICT absence in teaching • Positive thoughts and attitude of students towards TVE • Lab –proper • Library –Problem • Lack of teacher quota

	TVE • Lab –proper • Library –Problem • Lack of teacher quota • Active student participation • Leadership by SMC • Teachers training- missing • Lack of reference book\ • Lack of specification grid • Lack of teachers manual • OJT problem • Extra monetary resource - Extra monetary resource - School Internal source	• Active student participation • Teachers training- missing • Lack of reference book\text book • Lack of specification grid • Lack of teachers manual • General and Technical classes on same building so difficulty in management • No Physical/ academic and financial management • OJT problem • Extra monetary resource - School Internal source, local personal and organizational donation
Schools	**Malika Arjun secondary school Mahakali- 7 Dracula.**	**Janabikas Secondary, Barbach, Darchula, Duhu Gaupalika-3**
Streams	**Civil Engineering**	**Plant science**
Gist of Findings	• Excellent outlook with good boundary	• New principal • Active teacher participation

	• Active teacher participation • Good cooperative SMC • Participation of student excellent • Appreciation by community • Society concern • Physical infrastructure sufficient • Sufficient Lab/ • No proper use of materials-com • High demand for teachers quota/ managing by local resources • ICT absence in teaching • Positive thoughts and attitude of students towards TVE • Lab –proper • Library –Problem • Teachers training- missing • Lack of reference book\text	• Good cooperative active SMC • High political influence in school should be avoided as recommended by teacher's parents and students. • Participation of student excellent • Lack of community awareness and participation • Physical infrastructure in sufficient • Sufficient Lab/ • No proper use of materials-com • High demand for teachers quota/ managing by local resources • ICT absence in teaching • Positive thoughts and attitude of students towards TVE

	book • Lack of specification grid • Lack of teachers manual • OJT problem • Extra monetary resource - School Internal source • Extra monetary resource - No community financial support but physical support /sram dan School Internal source	• Lab –proper • Library –Problem • Teachers training- missing • Lack of reference book\text book • Lack of specification grid • Lack of teachers manual • OJT problem • Extra monetary resource - No community financial support but physical support /Labor donation • Demand of collaborative work among schools [teacher and student
Schools	**Nepal Rastriya Secondary school, Surkhet, Mehel Kuna**	**Machhindra Secondary School, Kerabari, Morang**
Streams	**Plant science**	**Animal Science**
Gist of Findings	• HT- Dhal Bahadur Khatri, MA English • Experienced principal • Active teacher and student	• Experienced principal and teachers • Active teacher and student participation

	participation • Good cooperative active SMC • Participation of student excellent • Lack of community awareness and participation • Physical infrastructure not sufficient • No Sufficient Lab/ • No proper use of materials- • High demand for teachers quota/ managing by local resources • ICT absence in teaching/learning • Community - Scope unknown towards TVE • Library –Problem • Teachers training- missing • Lack of reference book\text book • Lack of specification grid	• Good cooperative active SMC and chairperson • Participation of student excellent • Active community participation • Physical infrastructure well sufficient • Hostel facility to the outsider • Own land and lab for practical work • Well understood about TVE by the community • Teachers training- missing • Lack of teachers manual • OJT problem • Guardians were found very much positive towards the program • Monitoring and supervision missing • Needs to guide the

	• Lack of teachers manual • OJT problem • Extra monetary resource - No community financial support but physical support /Labor donation • Demand of water supply- pump • No drinking water • No wall boundary • No toilet • Monitoring and supervision missing	teachers, students and SMC by the policy • Tendency of short term working by the teachers Extra incentive given to the teachers by the school
Schools	**Dhulabari Secondary School, Dhulabari, Jhapa**	**Himalaya Secondary School, Damak, Jhapa**
Streams	**Plant science**	**Computer Science**
Gist of Findings	• Experienced principal • Active teacher and student participation • Good cooperative active SMC and chairperson	• No good coordination between teachers and principal • Teachers are not satisfied • Active teacher and student

	• Participation of student excellent • Active community participation • Physical infrastructure well sufficient • Well lab • Hostel facility to the outsider • Own land and lab for practical work • Well understood about TVE by the community • Teachers training- missing • Lack of teachers manual • OJT problem • Guardians were found very negative towards DOE • Monitoring and supervision missing • Needs to guide the teachers, students and SMC by the policy • Tendency of short term	participation • Participation of student excellent • Active community participation • Physical infrastructure well sufficient • Not sufficient lab • Community is unaware about TVE • Teachers training- missing • Lack of teachers manual • OJT problem • Guardians were found very negative towards DOE • Monitoring and supervision missing • Needs to guide the teachers, students and SMC by the policy • Tendency of short term working by the teachers • Extra incentive given to the

	working by the teachers • Extra incentive given to the teachers by the school	teachers by the school
Schools	**Machhindra Secondary School, Kerabari, Morang**	
Streams	**Animal Science**	
Gist of Findings	• Experienced principal and teachers • Active teacher and student participation • Good cooperative active SMC and chairperson • Participation of student excellent • Active community participation • Physical infrastructure well sufficient • Hostel facility to the outsider • Own land and lab for practical work • Well understood about TVE by the community	

	• Teachers training- missing • Lack of teachers manual • OJT problem • Guardians were found very much positive towards the program • Monitoring and supervision missing • Needs to guide the teachers, students and SMC by the policy • Tendency of short term working by the teachers • Extra incentive given to the teachers by the school	

CHAPTER FIVE

STAKEHOLDERS' PERCEPTION ABOUT TVE STREAM IN PUBLIC SCHOOLS

As it has been clear that the TVE stream in public schools is yet very young and it is in the process of gaining popularity. The field survey, observation and interviews reveal the fact that those who have been informed about this program in school have developed positive attitude to it and showing keen interest in it. The perception of the stakeholders has been highlighted in the following points:

5.1 Parents and SMC's Perception

Parents do play a major role in the socialization, education and career decision process of their children (Okocha, 2009). Of course, the students of the age who join the school education at Grade 9 somehow can be considered immature enough to make self decision about their career unless they get proper counselling from their parents and school teachers. Therefore, looking into and gaining parents' perception about the existing TVE stream has been considered one of the milestones for its better future and its success. The report has found the following regarding parents' perception about TVE stream:

- The SMC members in majority of sampled schools are well informed about the TVE stream but the SMC members of some schools in Siraha and Dhanusdham do not know about TVE stream at all. In these schools, the guardians whose children are in TVE stream know nothing about their studies. Under this circumstance the perception of the guardian cannot be counted. But in other schools throughout the country, the parents are

found to have some idea about the TVE stream. However, the positive attitude of the guardians in these areas was found to be guided by two factors: cheaper studies and preparation and easy access to higher education. For instance, they have perceived that TVE is substitute to Civil Engineering, Electronic Engineering, Computer Engineering, etc. and it creates a platform for their children to gain easy access to the same field at the higher level.

- Except in the aforementioned area, TVE stream was found to be accepted well in the society. Looking into the reason behind its positive goodwill in the society and acceptance, the obvious factor was guardians' acceptance of the program. In some of the areas, the guardians were found so motivated that they want further program annexed with the existing one so that the children of varied interest could opt for variety.
- In the beginning of the program, when only Grade 9 was launched in the schools for the first time, the guardians were hesitant to enroll their children in this program of study but when the students passed SLC/SEE, they felt relieved but they still had some confusion whether the same stream would get continuity. The guardians showed their full acceptance to the program once the Grade 11 under the same stream was launched in the same school. Since then, their perception has never been negative.
- By reaching to the completion of one cycle of TVE stream, the guardians were found to have one more worry with regard to OJT. The guardians were found to have two concerns about OJT: a) placement and, b) length. They complain that their children have not got proper market for their placement. Since the guardians perceive this program as academic one, they are worried about the instructors in the job as they think their evaluation is finally done by those who appoint them on the OJT and question about the

quality and qualification of these OJT providers. Secondly, they are negative about one year OJT provision at the end of the program. They want their children to continue their studies in higher level. One year OJT at the end of the secondary level, push them one year back compared to those who come from general stream. They suggested the breakdown in the OJT period and want the OJT to be over by the time final result of Grade 12 is announced.

- Another confusion prevailed among the guardians was regarding the fee charged to the students undertaking this program of study. They are sure that the compulsory secondary education is free and paying fee for the same was against the rule. But when they were convinced as to why the fee was charged, i.e. lab fee and annual fee, almost all the guardians were found to accept it positively. Now, majority of guardians have no problem with this issue.
- The guardians are more interested in good job of their ward rather than developing the attitude of entrepreneurship in them. Therefore, their perception is that the study in TVE stream will help their children get good jobs. Majority of them are not bothered about their children's self-employment.
- The guardians were found to worry about the stability of TVE teachers in schools. They expressed that they did not know the reason behind frequent change of the teachers. They have the perception that the TVE instructors are instable in schools.
- The guardians are happy that the TVE program has become locally available.

5.2 Teachers' Perception

Since the teachers/instructors are the major stakeholders in the education system, their perception about the stream they are involved in matters a lot. If they positively perceive the program, they

will be motivated in dealing with the students while their negative perception can influence the students' learning negatively. Therefore, the study sought to find out the perception of TVE stream in school and the findings have been highlighted in the following points:

- All the teachers have positively perceived the TVE steam and all of them think that it is the need of the nation. They think that this program should have come earlier.
- Majority of teachers expressed satisfaction with their professional work and expect the teachers at Belapatti, almost all the teachers have positive perception with regard to professional remuneration and facilities with some reservation.
- In the perception of the teachers, the curriculum of Grade 9 and 10 is somehow relevant while the curriculum of Grade 11 and 12 is higher to the ability and age factor of the students.
- Similarly, regarding their permanency in the job, they have negative perception as they are not sure about the continuity of their job for a long term.
- They think that text-book should compulsorily be introduced and developed so that there could be similarity in content delivery and uniformity in study outcome.
- They perceive that the stream could do even better if each TVE schools dedicated separate department for TVE and their participation in the SMC.
- The teachers' perception towards OJT is confusing. They are not quite sure about the OJT process. The placement, they feel, is the challenge to many schools. Even the teachers have the perception that OJT means being engaged in some sort of employment created by others irrespective of the stream of study undertaken by the students. They were not found to perceive that working in the farm with the implementation of learned skill for the students of plant science an OJT.

5.3 Students' Perception

Another of the major stakeholders of any form of education is students. The study tried to find out the perception of the students as well, which have been highlighted as following:

- The students in the TVE stream were found to have very high acceptance of TVE stream and are highly motivated to pursue the study. This shows that their perception to the stream is very positive.
- The students in Bara, Saptari and Dhanushdham were found to be extremely dissatisfied with the instructional activity. Therefore, their perception is somehow negative. However, the students in Kirtipur, Butwal, Dang, Bhaktapur, Kavre, Dhulabari, etc. were found to have positive perception towards the instructional activities.
- They have deep concern about the OJT. They feel that the OJT was imposed to them in the middle or towards the end of the program without giving them prior information during the time of enrollment. The students in some of the places of eastern part of Nepal even created the situation of confrontation with the researchers during the data collection process. This shows that they have developed extremely negative perception to OJT and want it to be divided into equal proportion at all the Grades of secondary level, i.e. 9 to 12.
- Majority of students, like their parents, have taken this stream as the base for good job or a good ladder for the higher studies. Very few numbers of students have perceived this stream as the skill oriented program and its crux lies primarily on being self-employed on completion of a level rather than furthering the education.
- The students have perceived that giving a separate mark sheet on completion of each grade of secondary level is not a good practice. They expect to have a mark sheet like that

of Bachelor in Engineering, Computer Science or any other fields that integrates the subjects and marks of all semesters (years). Another negative perception that the students have developed pertains to two grading systems: GPA and Percentage. The marks they obtain in the SLC/SEE for last two years are graded in GPA while the mark sheet of Grade 11 and 12 contain percentage. They perceive the secondary education 9-12 a whole which should not be fragmented with two grading systems.

5.4 Head Teachers' Perception

At the present scenario, head teachers have added responsibility in the schools where TVE was implemented in 2070 BS. For the success and failure of the program, the head teachers play key roles. They have been shouldering the responsibility of appointing the TVE teachers/instructors. Because of the added responsibilities, they have hardly free time for the TVE teachers' performance management. Though they have somehow managed to discipline them, they were found too busy to take out time for motivating and training and development of these teachers. So these vital aspects are found to be in the darker side. Their role further extends to problem solving and decision making which seems to be muddled in the confusion they carry with the lack of detailed knowledge and skills regarding TVE stream. Many head-teachers have the complaints about untimely release of the budget which has hampered in the management of the adequate resources required for the stream. Therefore, their guidance to the teachers is another of the shaded part of the TVE head teachers.

In the part of the students, head teachers are also responsible for monitoring and assessing students' progress and maintaining their records. Some of the head teachers were found informed about it but majority of them depend on other staff and teachers for this.

In this context, the research team tried to explore the perception of the head teachers which have been highlighted in the following points:

- Majority of the head teachers in the sampled school are proud of having the opportunity to handle the responsibility of TVE stream. They have perceived that they have accepted such a great challenge as to take the stream to a success.
- Regarding the remuneration they are getting, the head teachers were not found to have major complain about it. Their perception is guided by the fact that they are contributing to nation building rather than monitory gain at present. However, some of the head teachers are expecting additional allowance for the responsibility. One of the head teachers has perceived himself to be inferior to TVE teachers in term of payment
- Though teachers' perception was found positive towards departmentalization, some of the head teachers were found against it while a nominal number of head teachers were found to initiate this concept. Therefore, regarding departmentalization of TVE stream in schools, the perception of the head teachers was found mixed on with regard to it.

In this way, the TVE stream is slowly creating positive perception among its stakeholders.

CHAPTER SIX

SWOT ANALYSIS OF TVE STREAM IN GENERAL SCHOOLS

6.1 Introduction to Technical and Vocational Education Stream in General Schools of Nepal:

The technical and vocal stream in general schools of Nepal was commenced in 2070 B. S. In the piloting stage, a total of 99 general schools were approved of running this program. In the span of four years, the number of schools gaining approval to run this program has reached 242. Specially, five stream of TVE studies have been introduced in these schools which are Computer Science, Civil Engineering, Animal Science, Plant Science and Electrical Engineering. Since the number is increasing every year, there are various grades running in the stream while the schools starting TVE at the piloting stage have completed a cycle of secondary education and the final grade students i.e. grade 12 have been waiting for their result.

The surveyed schools were found to have developed their own science lab, chemistry lab, physics lab and computer lab. All of the technical and vocational schools are administered by the general school administrators and head teachers. All of the head teachers have at least Masters' Degree are found to have been experienced in their field of education after the introduction TVE in the schools.

The observed schools which have launched technical and vocational education have been found have enough land in their own possession. In the Midwestern and Far Western part, Panchadewal Secondary School runs Computer Science; Saraswoti Secondary Schools Goberdiya, Deukhuri Dang runs Animal Science effectively. Similarly, in Dhamboji

Secondary School, Banke Nepalgung, Computer Science has been launched effectively. Likewise, Durga Laxmi Secondary School, Attariya, Kailali runs Computer Science. In Darchula district, there are two schools which run TVE technical steam, among which Malikarjun Secondary School has launched Civil Engineering and Janabikas Secondary School, Barbanch, has Plant Science stream. In the same way, Nepal Rastraya Ma. Vi. Mehelkuna Gurvakot Municipality, Surkhet runs the Plant Science Stream.

The aforementioned and other schools all over Nepal in different districts and region have their own possibilities of educational opportunities, access in education, quality enhancement practices, equality and inequality issues. Some schools have physical, financial and academic problems in the case of technical and vocational education. The strength, weaknesses, opportunities and threats of the program is determined by the physical, academic and financial status of these schools. Therefore, an effort was made to analyze the same and has been jotted down in the form of SWOT analysis on the basis of direct participant observation, in-depth interview, focus group discussion and triangulation from the field survey report collected by different stakeholders of TVE:

6.2 Strengths of TVE Streams

Despite different confusions and lack of proper information to targeted population, the TVE schools were found gain popularity in their localities. Some of the strengths witnessed about TVE streams in general schools of the country have been highlighted as following:

- Active student participation
- Students self confidence in self-employment
- Conceptual development of sustainable enterprises

- Each and every surveyed schools have their own enough land property
- Green environment in the school compound.
- Formation of eco-clubs in the plant science schools.
- Practice to use the fertile land area of the schools.
- Active roles of the head teachers.
- Strong support of the SMC.
- Plantation of seasonal fruits within school boundary
- Gardening by the students of civil engineering into the school compound in Dang district.
- Beekeeping, fishpond in students' houses and in the school area.
- Maximum use of land of the school as the agronomy in schools.
- Seeds management and protection in the schools.
- Benefit to the local people by the help of plant science, animal science, electronic students
- TVE has addressed the daily need of local people and students.
- Developed attitude to work to the students.
- Addressed the need of health, agriculture, construction, technology and computing at the local level
- It is somehow started to contribute in poverty alleviation
- Positive impact in sustainable livelihood of Nepalese societies.
- Students have been profited from computer skills, agronomy skills and construction skills.

The aforementioned points address the everyday needs of students and local community as sign to the broader development of the nation. Indirectly the curriculum of technical and vocational education is fostering the agricultural entrepreneurship, technological entrepreneurship and water resource and electricity development in Nepal. This Technical and vocational stream of school education may be milestone of human development index of this decade in Nepal. With the implementation of this practice by the Ministry of Education of Nepal, local people have started to visualize a different picture of New Nepal.

6.3 Weaknesses of TVE Stream

The schools which have launched computer science, plant science and civil engineering have their own problem in the physical, financial and academic area. The weaknesses are mentioned below:

6.3.1 Physical Problems:

- **School Compounding Problem**

  Though the schools have good area of land, they were found to face proper fencing and compounding problems. For this reason, the domestic animals destroy the seasonal fruits and plants cultivated by the students in the schools. Local people were found not to develop the attitude towards the school property as their own. Therefore, the school property is not secure. This problem was found severe in the case of the schools located in Kalikot, Surkhet, Dang, Darchula and a few schools in the Terai region.

- **Irrigation Problem**

  The schools having plant science are found the face the problem of water resources, water reservoir tanks and water pumping machines. Water is essential for plants and other farming such as fish-pond.

- **Drinking Water and Sanitation Problems**

  Some of the technical and vocational schools have no toilet and water in the school area. The students walk to the jungle for addressing their natural calls. Though the number of such schools is nominal, these are some of the most important facilities to be addressed at the earliest.

- **Inappropriate Size of Rooms**

  The size of the rooms of the computer lab, chemistry lab, and physics lab was found very small. Classroom management remains mediocre.

- **Problems of Experimental Lab Classroom**

  Students are not getting opportunity to accomplish their practical class together due size of the rooms.

- **Absence of Play Stall And Rest Benches**

  Play stall and rest benches were not found to have set up within the school premises. They are forced to take shelter in the shades of the trees or somewhere near the grounded balcony.

6.3.2 Academic Weaknesses:

- **Problems of Teachers Quota**

  Majority of schools have demanded teachers' quota and their professional guarantee in teaching. One of the SMC members told that the teachers were not permanent and experienced change every year. The private source is not enough to provide high salary for engineers and agronomy specialists.

- **Weaknesses in the Library**

  Libraries were found not managed well. There is the lack of reference books and text books related to the course of study. The teaching learning activities were found on the basis of teachers' notes. Students totally depended on teacher note.

- **Curricular Problems**

  The concerned teachers and administrators and students commented on the integration and relevancy of the curriculum. The horizontal and vertical relation is not established in from grade (9-12) and in basic level to tertiary level curriculum.

- **Unavailability of Curricular Materials**

  The teachers guide, teachers manual, specification grid and other related materials to the course were not found in the school library.

- **Pedagogical Problems**

  All the teachers who are teaching in Civil Engineering, Plant Science and Computer Science in the sampled area have non-education background. They are untrained teacher and have no license. Therefore, remarkable gap in methodological knowledge in teaching learning activities was witnessed. Classroom delivery was not found inclusive and effective during the classroom observation. The classroom management lacked equity based management. It means there was the lack of equity pedagogy.

- **Professional Uncertainty**

  Majority of TVE teachers expressed insecurity in their present job status. There is no provision for the permanency of TVE teachers. Therefore, the teachers think that they will lose many years of teacher youth in the job without secure future. This is one of the de-motivating factors for the effective pedagogical practice in the TVE schools.

- **Dual role of Head Teachers:**

  The head teachers are administrating both streams: general and vocational in the same school but they have no incentives from the site of TVE steam. This dual type of administrative role was found to create confusion in the effective management and supervision of schools. Some of the technical and vocational teachers demanded separate head teacher for the technical and vocational stream.

- **OJT Problems in Catchment Area**

  The schools located in the rural areas where there is lack of well developed market and urban facilities, the students studying Civil Engineering and Computer Science have found it hard to gain placement for the OJT. However, the students of Plant and Animal Science and Electrical Engineering have some exposure on their own initiation and making livelihood out of it.

- **Problem in Students Quota**

  The MOE has determined 48 seats for the students in each TVE schools beginning from grade 9. This quota is insufficient where the student's pressure is very high. Most of the schools feel the absence of the MoE and DEO's to solve these problems. The head teacher cannot address their need on the basis of students' needs. The student's quota needs to be increased in the high pressure schools in urban and rural areas.

- **Teachers Competency Problems**

  Majority of teachers in the TVE streams are naïve to teaching and know very little about pedagogical process. They have not got any comprehensive pedagogical training and content delivery methods. As a result, the continent delivery varies based on the competency of the teachers. All these teachers were found to stand in the favor of

teacher training. NCED and other concerned institutions need to extend their focus to the pedagogical training in the TVE schools to enhance the students' achievement.

- **Supervision And Monitoring Related Problems**

  The schools administration and SMC members pointed out that the upper level authority of the education system has failed to carryout proper monitoring and supervision of the TVE schools on the regular basis. In some of the schools, the higher level authority has not even given a glance since its establishment. The managerial difficulties, advisory problems, directional problems were found in the field.

6.4 Opportunities of TVE Steam:

TVE stream is generally expensive compared to the general stream of education in schools but the perception of the society about this stream is very positive and they were found to term it productive program at the local, regional and national federal level. This type of education will address the need of local people in their all walks of life. The students enrolled in the Plant Science were found engaged in vegetable production, beekeeping in school and their home, fish ponds, floriculture and seasonal fruits cultivation. Except the aforementioned benefits, TVE program has the following opportunities:

- Maximizes utilization of school land area.
- Utilizes the useless land of the students at their homes.
- Creates opportunity for abroad employment.
- Increases self-employment opportunity
- Develops technical skills and attitude
- Transforms vocational skills to the local people.

- Develops competent manpower for agriculture, animal husbandry, plant science and computer science
- Helps increase quality life and sustainable life
- Controls the youths' engagement in social evils.
- Creates early opportunity for generating income and developing the entrepreneurship in the students.
- Reduces the basic need problems of students' family members.
- Develops income generation business on students' own initiation
- Utilizes natural diversity.
- Avoids dependency
- Helps in sustainable development and conservation of bio diversity in different region of Nepal.
- Acts as the weapon to conserve climate change and mitigation by the help of plant science education in different federal state schools.
- Increases awareness and skill to become more supportive in the issues like climate change, transportation, hydro-power and water conservation
- Addresses the demand of 21st century.
- Supports in eco- conservation, land shape management and better development of pasteurization.
- Helps supply the manpower in the international market and nation states.
- Supports small cottage industries
- Promotes indigenous skills of Nepalese villagers.

This education was found more export oriented than import in Nepalese education business market. This education founded more practical than general stream. The general education produced lazy useless manpower in Nepal and it is being impractical education therefore all concern Nepalese people demanding technical and vocational education. Everywhere the appreciation and supportive voices found from the study of different schools students, teachers, guardians and school sector concern members.

We found the response from focus group discussion, interview and class observation to launch general stream from grade (1-8) and technical and vocational stream from grade (9-12) seems more effective and the general education should be limited in grade 1-8 only. The input of the government and the guardians is being misuse in the general stream up to nursery level to tertiary level education of Nepal therefore from the policy level it is more considerable to furnish the technical and vocational education.

6.5 Threats to TVE Stream

TVE is inevitable to enhance the quality life education and in economical access development of the disadvantaged and marginalized people of the nation. There would be the equality development where the basic needs are to be addressed and that education would be the equality based education. By the better practice of TVE we can ensure educational and social justice to the local people.

The public complain found in policy level personnel, educational leadership, senior directors of education and political leaders who did not compared the education system with the life of marginal and disadvantaged people. Why the education system invited malnutrition?

Poverty and famine faced in the remote village of Nepal since long period in Nepal. The developed and underdeveloped cases are not linked directly in school education. Some institutions and elite class people do not want see success TVE to accomplish their individual interest. The foreigners and INGOs did not think about day to day problems of Nepalese people. Therefore there are many more threats found from the study which are below mentioned:

- Careless of bureaucracy to TVE
- Misconception towards TVE
- Lack of community awareness
- Interference of CTEVT
- Misinterpretations of private sector institutions
- Lack of supervision and monitoring.
- Expensive materials
- Extra Burden subjects in curriculum
- Lack of physical infrastructure
- Variation in fee structure.
- Lack of competent and trained manpower
- Lack of teachers quota
- Problems in profession
- Private sector teachers.
- Financial hazards in private sector teachers
- Pedagogical and methodological problems in classroom delivery
- Problems in practical classes.

- Problems in leadership, monitoring and supervision and guidance.
- Problems in manpower supply and employment.
- No identification of market for produced manpower.
- Curricular gap of school level and higher education.

Except the aforementioned threats the international market for produced manpower is not identified. SAARC level technical and vocational curriculum is not compared. Content are not properly organized in the formulation of curriculum. The curriculum disseminations are not provided in local level and the local community people response is not addressed in curriculum and textbook. Lack of enough budget in technical education is another threat of TVE in Nepalese education system.

CHAPTER SEVEN

GAP: POLICY AND PRACTICE

Since the TVE stream in the Nepalese public secondary schools is very young, literature regarding this stream is very rare. However, some of the policy documents like the SSRP, the SSDP, the TVE Directives, the CTEVT journals, the MoF Red Book, the NPC documents, the CBS, the NEP (2028), the CDC, etc. have discussed on the concept and policy of TVET which were analyzed in detail and have been furnished in the chapter Literature Review. On the basis of the same, this study made an attempt to find out the gap between policies and practices. In this process, several gaps in policies and practice have been found and major ones of which have been highlighted in the following sub-headings:

7.1 Goal Discrepancy

The SSRP and SSDP have been found to focus on the concept of TVE in the general public schools to prepare mid-level skilled manpower for job market thereby solving the problem of unemployment. This document has further envisioned eliminating the school dropouts by 2080 BS through TVE. Therefore, the goal of TVE is to give access and equity to the marginalized students and parents but provision for entrance exam is found to be hindrance on the way to equity. Of course, entrance examination has created equal opportunity and only those who do well this exam are qualified to pursue the study in this stream. However, there is not found any mechanism to ensure that the vulnerable students who are at the verge of school dropout, students from extremely marginalized community, poverty-stricken families and backward societies. Therefore, the goal of ensuring equity has been met by the practice yet.

Secondly, the thrust of TVE stream is to produce mid-level manpower for the job market so that on completion of a cycle of secondary level or even before, the students should be able to make a sustainable livelihood through their education thereby contributing to the national economy. However, the focus seems to be shifted to something else i.e. majority of the students were found to join this program for easy access to higher education rather than being capable of supplying with the skilled manpower needs of the nation.

7.2 The TVE Curriculum

TVE education basically was focused to prevent the dropout of weak (in academics) and for those students who may not afford their higher studies financially or academically. After studying TVE even up to 9 and 10, they can enter a job market and sustain their livelihood. The curriculum of Grade 9 and 10 were thus focused on skills. So, 6 subjects focused practical and vocational subjects while 6 other subjects cater to core-curriculum of secondary education. Later on, when Grade 11 and 12 were introduced, the designing of curriculum took place amid the confusion pertaining to weather the course is for technician or overseer or as a bridge to higher education (like engineering, Vet doctors etc.) resulting in the product of confused syllabus which included all subjects of +2 science stream and 2 vocational subjects each in grade 11 and 12. It means the curriculum did not focus TVE subjects as in class 9 & 10 but focused on subjects of +2 pure science streams. The existing curriculum of TVE stream and general stream has been shown in the following table:

Table 10: Existing curriculum: outline of subjects only

Grade 9 And Grade 10		**General stream**		**TVE stream**
	1	Nepali	1	Nepali
	2	English	2	English
	3	Math	3	Math
	4	Science	4	Science
	5	Social studies	5	Social studies
	6	EPH	6	EPH
	7	Optional -1	7	TVE -1
	8	Optional -2	8	TVE -2
			9	TVE-3
			10	TVE -4
			11	TVE -5
			12	TVE-6
		A total of 8x2 =16 subjects in both grade 9 and 10		A total of 12x2 =24 subjects in both class 9 and 10
Grade 11 And Grade 12	1	Nepali	1	Nepali
	2	English	2	English
	3	Physics	3	Physics
	4	Chemistry	4	Chemistry
	5	Biology/Math	5	Biology/Math
	6	[extra math]	6	TVE -1
			7	TVE -2
		A total of 10 subjects in grade 11 and 12		A total of 14 subjects in grade 11 and 12

(Source: CDC)

From the comparison of the curriculum of all Grades of TVE and General Stream as shown in the table above, it seems that it has to be modified and re-distributed. For instance, generally, an academically weak student who wants to skip general stream enters the TVE stream in Grade 9. The student continues in grade 10 and lands up taking the science subject in TVE based +2 program despite being uninterested in science subject, which appears unjustifiable. Therefore, the study suggests the re-distribution of subjects so as to make the curriculum appropriate for the age making it relevant in terms of weightage to TVE students.

The comparison of the subjects in +2 science stream and + 2 TVE stream is presented in the Table No: 7.2 below:

Table 11: Comparison of subjects in +2 Science General Stream and +2 TVE Stream

+2 Science General Stream	**+2 TVE Stream**
Physics -200	Physics -200
Chemistry-200	Chemistry-200
Biology-200	Biology-200
English-200	English-200
Nepali-100	Nepali-100
Math-100 +100 (optional)	Math-100 +100 (optional)
	TVE subject
	TVE subject

(Source: Field Data 2017)

In an attempt to understand the policy, we figure out that the program was prepared for weak (financially and/or academically) students and so was the course of class 9 and 10 (although the

course is bulky) but when it was upgraded to 11 and 12, students are now finding it difficult to study the pure science subjects like physics, chemistry, biology and math.

7.3 Major Gaps between Policy and Practice

The review of polices and observation of the practices in the field (in the sampled schools) pointed out to the fact that there exist several gaps which have been shown in the following table:

Table 12: Major Gaps between policies and practices

Policy	Practice	Problem	Solution
Equity: Marginalized, Vulnerable cohort which is at the verge of dropping out from school education	No provision for marginalized rather have entrance system	Students from private boarding schools are being attracted and major portion of the pie belongs to them.	Quota and reservation system till equity is achieved in the stream.
Target: Production of skilled lower-level workforce or mid-level workers	Most of the students and parents were found to perceive it as the foundation course for the easy access to higher study in engineering, vet. Doctor, etc.)	Different perception of the public and MoE, GoN, purpose of the introduction of TVE stream diverted.	Proper dissemination, Counselling to the students and their parents, Aptitude test for identification of students' purpose
Curriculum was planned for skill base	Most of the practical subjects/part of subjects are theoretically taught (no/less opportunity	The targeted objective may not be achieved as the teaching learning activities are mostly based on theories than in practice	Setting up proper laboratories, maximizing the use of available physical resources

	for learning by doing)		of the school and availing adequate materials for practice, orientation to the teachers to make them realize the crux of TVE stream
Teacher adequacy needed for skill transfer	Consistency/adequacy, continuity of teacher lacking	Lack of teachers, tedious and expensive recruitment process, low status of TVE teachers	Pooling the potential candidates, simplification of recruitment procedure, empowerment of the teachers, TITI should be made more effective
Skill based performance evaluation system	Practical exam is taken once in a year and most of it depends on viva - Objective structured Procedural examination lacking -	Students' work efficiency remains untested, more theoretical aspects and knowledge gets prioritized rather than skills of the students, no difference between general and TVE stream	Continuous assessment system should be introduced, practical assignments should be given and supervised while they perform it, level of work efficiency needs to be recorded and

			displayed every term, if possible monthly or weekly Recovery record of efficiency test gap should be maintained
Monitoring of all TVE should be done by CTEVT	No monitoring bodies, school inspectors do not bother much on TVE stream	Confusion prevails, level of comfort increases, feeling of neglect develops, solution delays, problem changes into issue, accountability decreases	CTEVT should handle the responsibility of monitoring and regulation,
Financing by GoN and generation of fund through local resources	Dependant on the central budget	Untimely release of the budget, inadequate, no efforts concentrated to generating fund from	Timely release of the budget, optimum use of available local and school resources concentrating them toward income generation for the program

(Source: Policy Documents and Field Data, 2017)

7.4 TVE VS CTEVT

There is a huge debate and confusion about role of CTEVT and its constituent campuses once this TVE in secondary level was brought into practice. It seems or it is perceived that government has established a parallel body. We have to correct the mistake we have done previously by letting CTEVT to go like affiliating body.

Therefore, many discrepancies in practice and confusion in curriculum especially results from the confusion of experts about the objectives of TVE. It appears that in an attempt to equate it with diploma level courses of CTEVT as well as due to attitude of mixing the technical and vocational stream with science stream and creating direct ladder to Engineering and other bachelor level courses, most of the confusions germinate from. It indicates that very less homework was done to clarify the objective of TVE and bringing it practically into practice. However, nothing is being irreversibly damaged.

Talking about CTEVT, it was established in 1989 (2045 BS) (www.ctevt.org.np) in an attempt to produce skilled human resource through technical schools. At present, even after the introduction TVE in general schools, it has been running various 3 years diploma courses in its constituent and affiliated colleges. It started 3 years diploma as vocational training courses since its beginning. Initially the product of 3 years engineering diploma courses was called overseer courses. Then, the students from CTEVT-run diploma were not given a chance or were not allowed to go into academics higher education i.e. Bachelor engineering /BE level when several universities were established after reinstatement of democracy in Nepal. Later on a provision was made in such a way that they were allowed to enter engineering stream (BE) after some job experiences. Theoretically, the ladder (for lifelong learning) was created and a way was made to vocational workers to enter university for further education.

Now, it is time to recall history that diploma of CTEVT provided opportunity to enter university despite being it purely technical and vocation in nature while the present TVE in general schools is baring the students from entering higher studies by adding 1 year OJT after +2 TVE program. OJT is required to enter Job market than to enter university. We forgot the past and are trying to

equate +2 TVE (which is academic degree but not only a vocational training) with CTEVT training (which was not academic course but a vocational training previously).

CTEVT is a regulatory body which can regulate, formulate, monitor the TVE education of short term and long term but it is not an affiliating body like Universities. It should not be giving affiliation but focus on monitoring and regulating TVE streams run in any form within the country. The previous decision or provision of giving affiliation of diploma level and TSLC can be corrected by handing over the responsibilities to TVE stream streams in general schools.

There are five different committees and subcommittees to coordinate the policy with the practice namely Central Directors' Committee, Central Management Committee, Central Technical Committee, Regional Coordination Committee and District Executive Committee. The so formed committees are highly theoretical and clumsy. All the committee so formed at top three levels include the governmental personnel of high ranks. So they are too busy to handle TVE properly as they have so many activities of various departments that they cannot think seriously and practically on TVE stream. It hampers the fast decision making and implementation process which needs to be very fast and prompt during the starting of newer projects/programmes like this. At least a task force (for at least 5 years) with authority for taking prompt decision at action level needs to be designed in such a way that includes experts of all 5 streams, experts of curriculum and experts of vocational and technical training.

As we are planning to have four years (9-12) secondary TVE education, we definitely should add OJT but not after class 10 or after class 12 only but OJT should go parallel or spirally throughout 4 years so that practice go along with theories. We may give credit hours and credit marks for OJT, too.

CHAPTER EIGHT

BEST PRACTICES (SUCCESS STORIES)

8.1 Shree Janata Secondary School, Belapatti, Dhanusha

Success story of the school has been divided into two sub topics.

8.1.1 Status of School before TVE Stream

This story was begun along with the unrest taken place in the Terai region. There was a school nearby a village where there was an aged head master in the village. He used to have his works in the headquarters. Therefore, his involvement in the daily activities of the school used to be rare. Though SMC was formed time and again, the same people used to be repeated in the committee and the process continued for near about 12 to 15 years. The total number of students would never go beyond 150. The enrolment of new students used to be very low, drop out was very high and accountability was always at the stake. Even the existing students would not have enough desk and bench for sitting. The building was very old and did not have required number of rooms. The SLC result was never above 0%. Parents ware rather negative and did not even like to accept its status in the locality.

The teachers were neither punctual nor regular. The school was like a refreshment home for them would come whenever they felt like spending some time in the name of job. Obviously, the scenario of the teaching learning activities was so poor that the students neither completed their courses nor would get any homework. Children of marginalized, poverty stricken and illiterate people were enrolled in the school. Therefore, there used to be two conditions: the guardians were so illiterate that they could not assess what was happening in the school and what their

children were gaining in the name of education and secondly, those who could realize what was happening with their children did not have other option to choose and their voice was never heard. Therefore, the guardians did not have any interest to the activity of the school. The school had its own mango groove, a pond with fish but these properties were not in the possession of the school. A few gangsters and done were taking the benefit from these properties. The school would get very nominal amount from them and major benefit would go to those gangsters. There was conflict among the teachers and politics was very heavy above all academic matters. The relation among the teachers, the guardians, the students and the headmaster was very cold and unethical. This directly influenced the financial and managerial activities and the transactions were very opaque.

Nearly five years ago, a youth was given the responsibility of the headmaster in the school. The responsibility of the completely disfigured school in the hand of a young headmaster was obviously a daunting job for him. The challenges and threats associated with it were unexplainable. Nobody in the school and around the school had ever believed that the junior would be able to combat with the challenges and threats and would carry on with the job. The clever youth pretended as if he knew nothing about principalship but kept on observing the unfolding circumstances keenly. He consulted a few good people of the society for further suggestion and then directed his effort to bring the properties being misused by those gangsters under the control of the school. When the gangsters lost their illegal possession over those properties, they threatened him that they would shoot him. They tried to attack him physically but he confronted them bravely. A case was filed against him and the school in the Chief District Officer's office. But finally he appeared winner of the case.

Since he had been working with good intention, he gained support from majority of people and gained success in everything he did. Encouraged by the success and the support of the local people, he turned out to be more enthusiastic and started to conceive innovative ideas and implement them for the reformation of the school. In the process, he organized a conference of the intellectual people and responsible local leaders where he presented his school improvement plan. The conference appreciated and approved his plan. Then he started to implement his plan with the establishment of SMC. He carefully selected the members of the SMC which was comprised of intellectual and honest members. He displayed his managerial skill by brining the retired chairman of District Development Committee in the SMC.

8.1.2 Status of School after Introduction of TVE Stream

After a fair and just SMC was established, he concentrated his effort for improving management of the teachers. He developed a code of conduct for the teachers and implemented it. Some of the teachers, who were unable to abide by the code of conduct, either resigned from the post or got transformed to other schools. Amid the arid physical infrastructure and uncertainty of the manpower, he decided to accept another challenge annexing the TVE stream in the school. The community was with him. Based on the unanimous decision of the community, SMC and himself, they fulfilled the required obligations and process to gain the approval to run Animal Science program of TVE stream in the school. Now, these students have completed a cycle of secondary level and have appeared in the final exam of Grade 12.

Now the school has been able to produce 100% SEE and Grade 11 results. Both stream of the school have sound infrastructure. Buildings are being constructed. Every year, students from private schools come to this schools gain enrolment in Grade 9. In the academic year 2073 BS, the number of students in the school was 1533 (One thousand five hundred and thirty-three).

Every year nearly 30 (thirty) pair of desk and benches. The average score of 9 to 12 grades in TVE steam is above 80%. The teachers and students enter the school before 10 am. All the teachers go to their respective classes in time and honestly get engaged in academic activities. Both the teachers and the students wear uniform without failure. They have developed a system of giving an exam every month and students are provided with proper feedback in time. They conduct extra-curricular activities every Friday. Students are creative. The school takes attendance of the students at the beginning of the school and end as well. If any student remains absent, the guardians are contacted immediately and inquired about their absence. Teacher, parents and administration interaction meetings are held time to time to discuss about the overall performance, achievement and attitude of the students.

In the TVE stream, experienced Vet Doctors are working as instructors/teachers. They say that they have returned to the village to serve the people and locality being motivated by the progress made by the school after the implementation of TVE stream. The remarkable thing worth noting here is that the teachers teaching in vet stream were qualified in India and Pakistan. The teachers have developed a very good sense of team work and have plenty of coordination, cooperation and communication among them. The result of TVE stream from Grade 9 to 11 is 100%. The result of Grade 12 is yet to be announced. 85% of Grade 10 passed students has got respectable employment and the students studying in other levels have also got some sort of employment in their locality. Some of them have started agro-vet shops and one of the students was found to run lab for animals.

All the teachers, students and guardians of TVE stream were found very happy and appreciated the stream for the change seen in the students. Everyone has faith upon the headmaster. It has generated an income worth five hundred thousand (500,000) from the pond and land rent. The

SMC members and headmaster have the dream of making the school No. 1 in the district within the span of next five years and working in commitment with their commitment and expectation. It came to our knowledge that the school is going to be announced one of the model schools of the district.

This story is the story of Shree Janta Secondary School located in one of the remotest village Belapatti, Giddha that lies to the southern east part in Dhanusha District. The energetic and honest headmaster to transform this school is none other than Mr. Pawan Kumar Mandal.

The transformation of the school was possible because of the honesty, professional commitment and perseverance initiated by the headmaster of the school. This story teaches us the lesson that working selflessly for a cause obviously brings success to anything we try our hands on.

8.2 The TVE Stream Has Changed My Life

Though the stream has completed a cycle, it has not yet produced the final result of Grade 12. However, there are plenty of success stories of the students brought about by this program. A few of the selected stories have been furnished below:

This is the story of a student from Machhindra High School, Morang. This school started TVE Animal Science stream in the year 2070 BS. Bishal (name changed) was hopless with his studies and he had not expected that he would pass the then SLC examination. He was very weak in studies. Therefore, he was neither a good family member in the perspective his parents nor was he a good student in school. He did not like to study at all. So, his performance in the class, in the internal examinations of the school and in doing homeworks was par below average. As a result, his motivation towards study was reducing every day and was in the verge of dropping out from the school. Even the society did not have positive feelings about him as he spent most of

the time wandering about. He reached home late, bunked the school and remained absent in the school frequently. He was aimless and his parents worried about his future.

In 2070 BS, his school introduced TVE steam in Animal Science. One of his relatives came to know about it and suggested him to repeat the classes joining this stream. In the first thought, he was hesitant to accept his suggestion and feared that he would not pass the entrance exam. However, his second thought encouraged him to give it a try. Being the stream newly introduced, many people were unknown about it and there was considerable flow of students to join this program. Therefore, the entrance exam in the first year was just a formality. His second thought proved out to be really meaningful and finally got a chance to be enrolled in the stream as a TVE student.

The first few months passed by without any significant impact. The number of subjects in the stream suffocated him as he thought he even was not able to handle the pressure of eight regular subjects of general stream, how could he do better in the additional TVE subjects? He was convinced of practical studies rather than theoretical ones at the time of his enrolment but no glimpse of it was to be seen during these months. Additionally, he felt to have been overloaded with the minor theories of applied science. Among the subjects, science and mathematics was what he feared the most during he was in the regular stream and once again the added responsibility in science gave him the dilemma as to why he should continue in the stream. There were no books available in the market. The teachers gave notes on majority of the subjects and being those notes in English, his pathetic situation, he felt, went on pressing him. Now, he had started to regret for the choice and cursed the relative for the suggestion. But the situation did not prolong.

Slowly, the TVE teachers entered them into the practical works. They spent a few weeks in the labs knowing about different instruments and materials to be used in the field of medicine, especially animal medicine. He said this stage started to rouse the interest into the study; not for the fact that he had understood what he was studying but for the fact that he had been, at least, able to identify the instruments and name them. He further added that it was the joy like that of a child in a nursery school who had started to grasp the alphabet and overwrite on the shape. The practical work was not limited to the labs alone but was extended to the field as well. Under the guidance of their teacher, the students of the stream started to visit the farmers' houses so as to treat the sick animals. On a few occasions, he was just asked to watch what the expert did and make a short report for the sharing in the class. He obediently followed his teacher's suggestion and went on observing the things minutely, the use of instruments and materials seen in the lab; the teacher's behaviour towards the animals; response to the animals' reaction and the symptoms of the ailment of those animals; etc. His repeated field visit started to boost up his confidence and at a point he developed such a confidence that he felt he could now handle repeated cases with the expertise of the teacher who had been mentoring him along with many of his friends. Among these cases, the complicated delivery of the animals was one. He had had a lot of exposure on it.

It so happened one day that one of his neighbours' cows was wailing and writhing in pain due to the complicated delivery. The neighbour, in despair, found no way out what to do the next. His wife suggested him to call the boy next door for some suggestion as she had seen the boy get involved in such cases somewhere and he could be of some help. The farmer had no idea what to do so he thought of taking a chance and sent for the boy.

When the boy observed the condition, he said, he was hopeless for a moment thinking that he was alone to handle the case which he had never done before alone. But the hopelessness did not

continue for a long as he started to recall the procedure his teacher had when he was with him. Then, mustered his courage to take the charge and ran back home asking his neighbour to wait for a while until he fetched the instruments from home. On his return, with his pounding heart and trembling hands, did all the needful procedure. Eventually the cow calmed a little and took the floor. His previous experience came to play soothing him that he was in the right direction. He continued the procedure and accomplished the task. The cow gave birth to a healthy baby which started in a short while. He heaved a sigh of relief and felt proud of what he had done. The neighbour in his soothing excitement proclaimed to award him Rs.1000/- the next day.

The next morning was truly a new day for him. When he woke up and went out strolling as usual to the nearby tea-shop, he found that everybody was talking about him. Those people greeted him in a different manner and he sensed respect in the exchange. One of the neighbours in the shop offered him a cup of tea. Other people started to interview him how he was able to do so. He savoured the moment with full satisfaction and thanked the relative whom he had dared to curse once.

It did not take long to spread the good news and people started to call him a junior vet. Doctor. Now and then whenever there were problems with the animals, he would be called for and would give right suggestions if the things were out of his control and he took the responsibility of the things those were under his belt.

Now he is a busy boy in the locality. Nobody liked to talk with him in the past. They used to criticize him for inviting bad company to their children and they wanted him away from them. Now, whenever there is some problem with the animals in the locality, he is the first person to be called upon. He is busy in school during the day time. He has earned respect among his friends

and teachers in the school. Everybody likes him and has been an exemplary figure among the youth of the village. He is busy in the morning and evening and is paid for the work he does for the people. Nowadays, he says, "The TVE stream has changed my life."

8.3 Lesson Learnt from the Success Story

The success stories teach some lessons:

- TVE stream itself can inspire a school for betterment.
- The unused school resources can be used as resource for the TVE stream and students' practical works thereby generating income from them.
- Even an individual effort concentrated on change can bring out positive result.
- Participation of local people and positive response of the community is a must for the success of TVE stream in public school.
- It is an opportunity for below average and weaker students to prove their worth on the work based education.
- It can be a life changing stream.

CHAPTER NINE

CONCLUSION AND RECOMMENDATION

9.1 Conclusion

The study was conducted to recommend the step ahead to carry out the TVE (9-12) stream in a secondary education of our nation. The research team sampled 28 schools out of 101 piloted schools with TVE stream representing ecological, development region wise and speciality of the subjects. With the tools like a. general information questionnaire sheet, b. interview guidelines with students, teachers, head teacher and other stakeholders in community and FGD guidelines. Data were collected from those schools by the team of experts and quantitative data was entered in EXCEL sheet whereas the qualitative data were transcribed- reduced- thematized and presented in the form of report.

The team observed that most of the sampled schools were doing well. Community is realizing the need and importance of the program slowly. Several infrastructure and materials have to be improved to get maximum output. Most of them have satisfactory infrastructure and basic needs. Most of them are running class 9 and 10 smoothly but has confusion and problem with class 11 and 12. There is strong need of modification of curriculum of class 11 and 12. Strong attention of stakeholders is most towards OJT. There is lots of confusion regarding OJT. Proper dissemination of the importance of TVE and its need in the society has to be worked out. Even government bodies and personnel from education department and government stakeholders should be active to popularize the TVE stream, its procedure, process, etc. The students and parents were found confused and showed frustration about the program. Some wrong information has been circulated even by the SMC and head teachers, which may be due to their

own confusion, lack of information or intention to fill the student quota. Teachers' retention problem is one of the major drawbacks of the program. Several solutions to solve these issues are addressed in this report.

The research team strongly recommends the continuation of the program with positive attitude which needs lot of support from the stakeholders which includes MOE, NGO, INGOs, Private organization providing Jobs and OJT, development partners etc.

9.2 Recommendations

Based on the findings of the report, the following recommendations are made:

1. **Enrollment**: The national policy clearly needs to address whether the enrollment should be based on equal opportunity or equity. Adopting the equal opportunity procedure, it is found that the target groups (such as girls, marginalized students, average and below average students) are left out. In other words, they are out of the access to TVE. Since the enrollment of girls in the schools of Terai belt in TVE stream was found very low, introducing reservation seats for girls in the schools of this area can improve the situation. Furthermore, to encourage equity, the following points needs to be adhered to:
   - **A.** On the basis of social justice, TVE education should be completely free to low income generating family, poverty stricken family, minority people, and marginalized groups while certain fee can be charged to those who can afford it. The students, teachers and parents are found willing to pay certain amount of fee in the name of practical charge.
   - **B.** It is appropriate for the MoE to determine upper and lower ceiling for the TVE stream so as to generate fund to invest on the poor.

2. **Basic Infrastructure**: Basic infrastructure should be set up within four years from the beginning of TVE stream in schools. For this, the government should release the grant in time. If any school fails to set up the basic infrastructure within the time frame, another short term opportunity (may be six month) should be availed. In case of failure to do so even in the extended period by any school, the TVE stream should be disapproved from the school. The DoE or MoE should prepare an indicator for the measurement of basic infrastructure to assess the capacity of schools. Schools having no infrastructure for boarding facilities should not run hostel.
3. **Objective**: The policy should clearly state the objectives for running the TVE programs in schools. Majority of the students were found to have enrolled in the TVE program as the preparation for the access to higher studies. It needs to be clear whether the TVE program has been introduced to develop intermediate level technical manpower or the manpower like +2 science and B. Sc. The main objective of this program should focus on developing intermediate level technical manpower.
4. **Reorganization/Approval**: Recognization/Approval procedure also seems inappropriate and haphazard. Therefore, the following points can help systematize the procedure:
   - **A.** While approving TVE stream in schools, first priority should be given to those areas where there are no any schools with TVE stream.
   - **B.** For a few years, until it gets systematized well and reaches to the target group with revised goals, private sector should not be approved to run TVE stream.
   - **C.** TVE schools should be approved in the remote areas, areas with *dalit* majority in Terai and the guardians of such students should be oriented on the importance of TVE.

5. **Teacher Management**: Teacher management procedure was found one of the weakest aspects in most of the TVE schools. Therefore, the following points should be implemented to make the procedure robust and sustainable:

A. Teachers in TVE streams should be provided with teaching license in the same way as is done with I. Sc. and B. Sc. teachers.

B. The MoE and NCED should coordinate with the universities and encourage them to introduce TVE teacher development programs.

C. Since the present teacher appointment procedure seems expensive and tedious, it needs to be simplified.

D. If any retired experts, teachers, professor or other personnel in the related field are available, the provision should not restrict them from being part-time instructor in schools having the field of their expertise.

E. It is appropriate for the NCED to develop and implement the short-term curriculum for TVE teacher development.

F. Before the commencement of every academic session, it is necessary to conduct an orientation program for the TVE teachers on curriculum, resource management, evaluation system, instructional procedure, instructional planning, etc.

G. Since conflict between the teachers of TVE stream and general stream was witnessed (i.e. taking more and less periods, technical-nontechnical, temporary-permanent), the headmaster should orient the teachers effectively to mitigate the scenario.

H. If the teachers could be appointed on the permanent service basis, the teacher turnover rate would be minimized.

I. If the temporary/contract teacher is provided with some certain grades on completion of one cycle of teaching, their motivation level could be raised.

J. Since the TVE teachers comparatively spend more resource and effort on being qualified, it will be justifiable if they are given some certain additional allowance beside salary.

K. The TVE teachers feel inferior in the society in taking up teaching as profession as the society has different expectations from them. Therefore, if TVE stream is well disseminated and established as distinguished field of study which needs to be instructed by professionals like Computer Engineers, Vet doctors, Electronic and Computer engineers, the morale of TVE teachers can be boosted up.

L. TITI should be made more effective.

6. **Revision of Curriculum:** Based on the findings of the report, the following recommendations are made with regard to curriculum:

A. Special efforts should be made in organizing curriculum horizontally and vertically.

B. Though the curriculum of grade 9 and 10 appeared satisfactory after its modification, the curriculum for grade 11 and 12 appears more advance in term of their age and ability.

C. The course of grade 11 and 12 resembles pure science as it appears to be more academic. So, immediate action should be initiated to make it more practical and performance based.

D. In grade 11 and 12, subjects of applied nature should get more focus and subject related with pure science less focus. Organizing the conference of the experienced TVE teachers at central/regional/provincial level, the curriculum should be revised keeping their input into account.

E. It is justifiable to associate experts with pedagogical knowledge and skill in the curriculum development body.

F. Contents related with software and practical activities should be added up in the curriculum.

G. In the field of technical studies, additional mathematics can replace compulsory mathematics. In addition, if the contents of additional mathematics and compulsory mathematics could be synthesized with systematic blend.

H. The responsibility of designing Teachers' Guide should be given to those who design the curriculum and the Teacher's Guide should be in the hands of every teacher before they begin the course.

I. Each TVE stream should have practical manual for students. Some of the schools were found to practice this, which can be replicated in other schools as well.

J. The contents that repeat in different subjects at the same grade i.e. engineering drawing and mechanical design should be synthesized into one.

Therefore, curriculum relevancy needs to be appraised. A proposed model guideline is presented in the following table:

Table 13: Re-looking into curriculum in terms of number of subjects (100 each): Grade 9 & 10

	Present TVE subjects in grade 9 and 10	**Suggested subjects in grade 9 & 10 in TVE stream**	
1	Nepali	Nepali (in 9 & 10)	1
2	English	English (in 9 & 10)	2
3	Math	Math (in 9 & 10)	3
4	Science	Science (in 9 & 10)	4
5	Social studies	Social studies (in 9 & 10)	5
6	EPH	(redesigned with relevant portion of EPH, as per need of stream)	
7	TVE -1	TVE -1 [in 9 only]	6
8	TVE -2	TVE -2 [in 9 only]	7
9	TVE-3	TVE-3 [in 9 only]	8
10	TVE -4	TVE -4 [in 10 only]	6
11	TVE -5	TVE -5 [in 10 only]	7
12	TVE-6	TVE-6 [in 10 only]	8

- At present the total Number of TVE subjects in grade 9 to 12 consists 6 +6 +2 +2 = 16 subjects which can be redistributed as [3+3+4+4=14 subjects, plus 1200 hours of OJT]. For this, curriculum and subject experts should be deployed to look into it in detail.
- By modifying the subjects in the curriculum, the total number of subjects will be eight in both grades 9 and 10, which equates with the subjects in general stream.

Similarly, in grade and 11 and 12 subjects distribution in each stream should be as following:

Table 14: Re-looking into curriculum in terms of number of subjects (100 each): Grade 11 & 12

SN	Present subjects in Grade 11 & 12 TVE stream	Proposed subjects in Grade 11 & 12 TVE stream	SN
1	Nepali	Nepali	1
2	English	English	2
3	Physics	Applied Science for Civil –I & II Applied Science for Computer –I & II Applied Science for Plant science –I & II Applied Science for Animal Science –I & II Applied Science for Electrical–I & II	3
4	Chemistry		
5	Biology/Math		
6	TVE -1	TVE -1	4
7	TVE -2	TVE -2	5
8	[Extra math-choice]	TVE -3	6
		TVE -4	7
		Math for civil/electrical/computer	8

These numbers of subjects will justify TVE stream students and will decrease overload of past curriculum. Apart from this, 1200 hours of OJT is most for TVE stream which can be of 400 hours each from grade 9 to12. This will overcome the issue raised by students, parents, teachers and other stakeholders regarding OJT as well as overload of subjects in TVE. There should be a provision for students to go into higher study by appearing Biology and Chemistry exam [as

extra subjects] to go for Vet nary science or agriculture or any biology subjects and by appearing Physics and Chemistry to go to any other engineering or physics in bachelor level.

The above mentioned suggestions will also justify the policy document like SSRP/SSDP/ CTEVT guidelines/ TVE guidelines and so on which say that TVE is to prepare the students for job market as a mid-level worker. In other hand, this way of modification can create a ladder for entering the higher education field like engineering.

7. Textbooks: Since the teaching learning activities are mainly based on textbook from the beginning classes of school education, the opinion about the requirement of textbook was found mixed. Some teachers strongly demanded the availability of textbooks while some others opined that curriculum based teaching without textbooks is appropriate and more effective. Therefore, each TVE teacher should be provided with high-speed internet band facility along with a laptop. Teaching through curriculum was found to be more effective as the students develop searching habits and giving their own input based on the experience. Despite this fact, variation in content delivery was genuinely conspicuous. To tackle this problem, textbooks written by the experts who have long TVE teaching experience can be a way out.

8. OJT: The existing concept about OJT was found too problematic and confusing. Therefore, it requires immediate attention if the stream to go ahead. The following model is suggested:

OJT Model

Suppose we allotted Total OJT for (grade 9-12) i.e for 4 years=1200 hours. We may divide it into 4 years so that each year one can have OJT for 300 hours, which should be monitored by maintaining log book, duely signed by OJT-mentor. Students can have their OJT during their vacation or at the end of each year.

8. Policy Recommended

A. TVE (9-12) should go as a separate stream after few years but still need to do a lot before we go for that. As a first step we have to work for enhancing the lab and parallely we have to work for departmentalization in all TEV (9-12) centre with proper human resources. Then as a second step we should go for separate building within a same compound of the school with all the facilities. At that time we should have good human resources and Lab facilities within the premises. We also should have OJT centres with facilitators and trainers (in collaboration with other NGO, INGO and Private sectors) which can provide proper apprenticeship during OJT. As a final step we can take TVE (9-12) as a separate independent stream. This whole process can take 5-10 years depending upon finance and motivation of all stakeholders.

B. TVE (9-12) should not be privatized till we reach to the final step of above goals, which is basically for achievement of equity and quality of TVE education (9-12).

C. All the schools having TVE (9-12) should have to work seriously for the apprenticeship or OJT centres or have to create one or more inside school premises.

D. This concept of TVE as a separate stream can be a strong doorway step for making a public school attractive for children's/students and parents for public school education.

E. There is a big query regarding the need of TVE schools as a parallel structure CTEVT diploma courses. One has forgotten that CTVET diploma course was regarded as a training rather than an academic course which was later on laddered for students wanting to continue their education (as a concept of learning throughout life) by creating a doorway to have bachelor education.

F. CTEVT is a regulatory body which can regulate, formulate, monitor the TVE education of short term and long term but it is not an affiliating body like Universities. It should not be giving affiliation but rather be a regulatory body. The previous decision or provision of giving affiliation of diploma level and TSLC can be corrected by handing over the responsibilities to secondary school TVE stream.

G. There are five different committees and subcommittees to coordinate the policy with the practice namely Central Directors' Committee, Central Management Committee, Central Technical Committee, Regional Coordination Committee and District Executive Committee. The so formed committees are highly theoretical and clumsy. All the committees so formed at top three levels include the governmental personnel of high ranks. So they are too busy to handle TVE properly as they have so many activities of various departments that they cannot think seriously and practically on TVE stream. It hampers the fast decision making and implementation process which needs to be very fast and prompt during the starting of newer projects/programmes like this. At least a task force (for at least 5 years) with authority for taking prompt decision at action level needs to be designed in such a way that includes experts of all 5 streams, experts of curriculum and experts of vocational and technical training.

H. The success of the program depends on teacher's motivation so provision of a complete career path as other teachers has to be defined.

I. There is strong need to disseminate the information about TVE by saying that this will prepare a strong skillful mid-class worker for job market and proper technical students who can enter the higher study by appearing 2 extra subjects. This should be made clear

to parents and students before the students apply to enter for secondary TVE courses of 9-12.

9.3 Up Next

The following table suggests the actions to be take the next:

Table 15: Up Next

Sn.	What?	Who?	When?	How?
1	Equity: Bring marginalized, vulnerable cohort which is at the verge of dropping out from school education into school	• Govt: Draft the policy • Line agencies: Implement them effectively	Before the beginning of the academic session	Quota and reservation system till equity is achieved in the stream. Training to the head teachers, SMC members about it.
2	Target: Production of skilled lower-level workforce or mid-level workers	Schools: Run an information dissemination seminar for the potential students on a regular basis	Before the enrolment of students	Proper dissemination, Counselling to the students and their parents, Aptitude test for identification of students' purpose
3	Plan Skill based curriculum	CDC: Revise the Curriculum focusing skill base	At the earliest	(see Table No. 13, 14 and point 6 of 9.2)
	Manage adequate number of teachers	Government	At the earliest	Pooling the potential candidates, simplification of recruitment procedure,

				empowerment of the teachers, TITI should be made more effective (see point number 5 of 9.2)
4	Start skill based performance evaluation system	Schools and Teachers	During the course hours	Continuous assessment system should be introduced, practical assignments should be given and supervised while they perform it, level of work efficiency needs to be recorded and displayed every term, if possible monthly or weekly Recovery record of efficiency test gap should be maintained
5	Assign CTEVT the monitoring responsibility nor affiliating body	CTEVT	During the course hours	CTEVT should handle the responsibility of monitoring and regulation,
6	Financing by GoN and generation of fund through local resources	Govt.	At the time of need	Timely release of the budget, optimum use of available local and school resources

				concentrating them toward income generation for the program
7	Introduce more Practical Teaching Learning process	Schools and Teachers	During the course hours	Setting up proper laboratories, maximizing the use of available physical resources of the school and availing adequate materials for practice, orientation to the teachers to make them realize the crux of TVE stream
8	Decide the OJT hours and design proper time frame	Government on the consultation of TVE teachers	At the earliest	See point number 8 of 9.2

9.4 Further Research Topics

A. Curriculum relevancy and TVE in National and International Context

B. Sectors to be explored for TVE in national context

C. Performance based assessment criteria for TVE

D. Monitoring and supervision mechanism for TVE schools

E. Approaches of learning delivery in TVE

F. Professional Competencies of teachers for TVE

References

Bista, D. B, (1985). Ethnicity, its problems and prospects. Kirtipur, Kathmandu: CNAS.

Brog, WR. & Gall, MD (1989), Educational Research; An Introduction, 5th Edn. New York, Longman

Cairney, H Trevor & Ruge Venue. (1997). Community literacy Practices and Schooling. Sydney, Australia: University of Viestern.

CBS, (2003). Population Census 2001: Cast, ethnicity, mother tongue and religion (District level) Kathmandu: HMG, National Planning Commission Secretariat, Central Bureau of Statistics.

CBS. (2002) Literacy Situation In Nepal: A Thematic Presentation; Kathmandu: Central Bureau of Statistics

CERID (2008). Education in Gumba, Vihars and Gurukuls in Nepal: Linking with mainstream Education. FRP. Kathmandu: CERID.

CERID, (2007). Institutional Scope and Need of Mainstream Education in Madarsa. FRP. Kathmandu: CERID.

CERID. (1999). A study on the traditional system of education through Vihars and Gumbas in Nepal. Kathmandu: Author.

CERID. (2004). Access of Muslim Children to Education. FRP. Kathmandu : CERI.

Creswell, J.W. (2012), Educational Research; Planning, Conducting and Evaluating quantitative and qualitative research, 4th Edn. Boston, Pearson

DoE. (2008). A comparative study on school cost between community and institutional schools. An unpublished research report. Bhaktapur: Department of Education.

DoE. (2009). A study on financial management of Department of Education, District Education Office and schools; and Tracking of school Grants (esp. SIP and Rahat Grants). An unpublished research report. Bhaktapur: Department of Education.

DoE. (2010). A study on identifying targeted interventions for ensuring students' retention at classrom. Bhaktapur: Department of Education.

DoE. (2010). A study on the effectiveness of teacher management system in terms of PCF. An unpublished research report. Bhaktapur: Department of Education.

DoE. (2010). Policy and Implementation Gap in mainstreaming Gumba/Vihar, Gurukul/Ashram and Madarsa in Nepal. Bhaktapur: Department of Education.

DoE. (2011). Role of resource center for improving quality of education at schools in Nepal. Bhaktapur: Department of Education.

DoE. (2064). Education Planning in Nepal. Bhaktapur: Department of Education.

DoE. (2065). Flash-I Report. Bhaktapur: Department of Education.

DoE. (2065). Flash-II Report. Bhaktapur: Department of Education.

DoE. (2065). School Level Educational Statistics of Nepal. Bhaktapur: Department of Education.

DoE. (2066). Flash-I Report. Bhaktapur: Department of Education.

DoE. (2066). Flash-II Report. Bhaktapur: Department of Education.

DoE. (2067). Flash-I Report. Bhaktapur: Department of Education.

DoE. (2067). Flash-II Report. Bhaktapur: Department of Education.

DoE. (2068). Flash-I Report. Bhaktapur: Department of Education.

DoE. (2068). Karyakram Karyanwyan Pustika. Bhaktapur: Department of Education.

Education Act, 2028.

Education Regulation, 2059

GoN. (2063). Interim Plan. Kathmandu: Government of Nepal.

KKBS. (2063). Nepalko Antarim Sambidhan, 2063. Kathmandu: Kanun Kitab Byawasthapan Samity.

MoE. (2003). Education for All Core Document (2004-2009). Kathmandu: Ministry of Education

Parwez, H.M. Zahid. (2003) Access of Muslim Children to Education, Kathmandu: CERID.

Shina, R. S. (2063). Education Vision for the 21st Century. Kathmandu: Kavre Offset Press.

प्रतिवेदनको सारांश नेपालीमा

आरम्भ

नेपालको हालको विकास योजनाले आर्थिक सम्वृद्धि, गरिबी नियन्त्रण र जनताको उन्नति जस्ता विषयलाई केन्द्रमा राखेको छ । देशको उत्पादनशीलता, वैयक्तिक आय र उन्नति प्रत्यक्ष रूपमा साधारणतया शिक्षाको गुणस्तर र विशेष रूपमा प्राविधिक शिक्षा र सीप विकासमा सम्बन्धित हुन्छन् । न्यून उत्पादनशिलता, न्यून आर्थिक वृद्धिदर, गरिबी र नाजुक जीवनस्तर नेपाल सरकारका मुख्य सरोकारका विषय हुन् ।

सीप विकास आर्थिक विकासको मुख्य आधार हो भन्ने कुरालाई महसुस गरी नेपाल सरकारले नयाँ प्राविधिक तथा व्यवसायिक शिक्षा नीतिको व्यवस्था गरेको छ । जस मार्फत मानव क्षमता र आय सम्भाव्यतालाई सुदृढ गर्ने तथा उत्पादनशीलता बढाई राष्ट्रको आर्थिक विकासमा योगदान पुऱ्याउन प्राविधिक तथा व्यवसायिक शिक्षा र तालिमलाई वृहत् रूपमा समावेशी बनाउने र विस्तार गर्ने प्रतिवद्धता जाहेर गरेको छ । एउटा असल तालिम प्राप्त प्राविधिक वा सीपयुक्त कामदार केवल असल नागरिक मात्र नभएर उत्पादनको प्रतिनिधि पात्र, आर्थिक वृद्धिको स्रोत र वैयक्तिक संवृद्धिको वाहक पनि हो ।

सीपयुक्त जनशक्ति र प्राविधिकहरूको भूमिका अर्थ व्यवस्थाका सबै क्षेत्रमा उक्तिकै महत्वपूर्ण रहन्छ । उनीहरूले आफ्नो जीवनका विभिन्न समयमा विभिन्न किसिमका सीपहरू विभिन्न तरिकाले सिकिरहेका हुन्छन् । जागिरे अवस्थामा on the job treaning मार्फत, स्वअध्ययन मार्फत, औपचारिक वा अनौपचारिक शिक्षा मार्फत, रोजगारदाताले उपलब्ध गराएका औपचारिक तालिम मार्फत र रोजगार प्राप्त गर्नु भन्दा अघि प्राविधिक तथा व्यवसायिक प्रतिष्ठनाहरूमा रोजगारीभन्दा पहिले सीप सिक्न माध्यामिक विद्यालयमा प्राविधिक तथा व्यवसायिक शिक्षा एउटा छुट्टै धारका रूपमा सञ्चालन गर्ने प्रचलन संसारभरी अभ्यास गरिएको विधि हो । रोजगारीको प्रशस्त अवसहरूसँग सम्वन्ध गाँसिएको, प्राविधिक तथा व्यवसायिक शिक्षाले विद्यार्थीको सीप अभिवृद्धि गर्न सहायता पुऱ्याउन सक्छ, उनीहरूको उत्पादनशीलतालाई बढाउन सक्छ र उनीहरूको व्यक्तिगत आय बढाई सम्पूर्ण जीवनस्तर उकास्दै दरिलो र प्रतिस्पर्धी आर्थिक व्यवस्था सृजना गर्न सक्छ ।

केही वर्ष अघिदेखि वैदेशिक रोजगारीमा प्रोत्साहित भई धेरै युवाहरू विदेश पलायन भइरहेका छन् । तर ती युवाहरूमा पर्याप्त रूपमा प्राविधिक सीप नभएका कारण उनीहरूले काममा निकै दुःख पाउनुका साथै आयस्तरमा पनि सम्वृद्धि ल्याउन सकेका छैनन् । वर्तमान अवस्थाले स्थानीय र राष्ट्रिय आर्थिक प्रवर्द्धनका लागि युवा रोजगार र उत्पादनशिलताको सुधारका लागि शिक्षाको सिधा सम्बन्ध रोजगारसँग हुनु पर्ने तथ्यलाई जोड दिन्छ । माध्यमिक विद्यालयमा उपलब्ध प्राविधिक तथा व्यवसायिक शिक्षाले सीप विकास गर्न चाहने सबैका लागि अवसरको पहुँचलाई फराकिलो पार्छ र युवाहरूको आय सम्भाव्यता र रोजगारीको प्रवर्द्धनमा योगदान पुऱ्याउँछ ।

देशमा बढ्दो वेरोजगारीले गर्दा शिक्षा, रोजगार वा तालिमभन्दा बाहिर रहेका युवाहरू सुरक्षाका दृष्टिले समस्याका रूपमा हेरिन्छन् । राष्ट्रले यस्ता कुरालाई अतितमा अनुभव गरिसकेको छ । उच्च शिक्षा, तालिम वा रोजगारको अवसरबाट वञ्चित वहुसंख्यक युवाहरू देशमा भएको द्वन्द्व, सामाजिक अशान्ति र अपराधमा प्रवृत्त हुन सक्छन् । यद्यपी, नेपालमा बढिरहेको युवा जनसंख्या देशका सम्पत्ति हुन र उनीहरूलाई उचित ज्ञानको आधार र आवश्यक सीप उपलब्ध गराउन सकिएमा राष्ट्रिय उत्पादनमा टेवा पुऱ्याउन महत्वपूर्ण भूमिका खेल्न सक्छन् । तसर्थ माध्यमिक विद्यालयमा प्राविधिक तथा व्यवसायिक शिक्षा रोजगार, शिक्षा र तालिममा सन्तुलित पहुँच बढाउन आवश्यक कदमका रूपमा महशुस गरिएको छ । जसले उनीहरूलाई रोजगारी र आय आर्जनमा रूपान्तरण गर्नसक्छ ।

व्यवसायिक सीपलाई विद्यालय शिक्षामा समाहित गर्ने परिकल्पना राष्ट्रिय पाठ्यक्रम (२००६) को अवधारणामा विद्यालय क्षेत्र सुधार योजनाको मुख्य दस्तावेजमा उल्लेख भएको थियो । जसले माध्यामिक तहमा प्राविधिक तथा

व्यवसायिक शिक्षा एउटा छुट्टै धारका रूपमा संलग्न गराउन जोड दिएको थियो । एस.एस.आर.पी.को कार्यान्वयनको समयमा पेशागत सुनिश्चितता र सीप विकासमा अनावृत्तिलाई आधारभूत तहमा (१ - ८) समावेश गरेको थियो । कक्षा ६ देखि ८ सम्म पेशा, व्यवसाय र प्रविधि जस्ता विषयहरूको थालनी पेशागत सुनिश्चितताका उदाहरण हुन् । एस.एस.आर.पी.ले पेशागत तयारीलाई पनि विशेष जोड दिन माध्यामिक तह (कक्षा ९-१२) सम्म प्राविधिक तथा व्यवसायिक शिक्षाको थालनी गरेको थियो । शिक्षा मन्त्रालयले कक्षा ९ र १० मा परीक्षणका रूपमा प्राविधिक तथा व्यवसायिक शिक्षाको थालनी १०० वटा सामुदायिक माध्यमिक विद्यालयमा सुरु गरेको थियो । सन् २०१५ मा शिक्षा मन्त्रालयले उच्च माध्यमिक शिक्षा परिषद मार्फत कक्षा ११ र १२ मा पनि प्राविधिक तथा व्यवसायिक शिक्षालाई छुट्टै धारका रूपमा सञ्चालनमा ल्यायो । जम्मा ९२ वटा विद्यालयले प्राविधिक तथा व्यवसायिक शिक्षा माध्यमिक तह (९-१२) मा दिइरहेका छन् ।

अध्ययनको आवश्यकता

राष्ट्रिय शिक्षा पद्धतिको योजना २०२८ अन्तर्गत विद्यालय तहमा व्यवसायिक शिक्षाको अनुभव गरिएको भए तापनि त्यसको सार्थक विकास हुन नसक्दा विद्यालय तहबाट व्यवसायिक शिक्षा हटेको थियो । मध्यम स्तरीय जनशक्ति उत्पादन गर्ने हेतुले व्यवसायिक शिक्षालाई व्यवस्थित गर्न Council for Technical Education and Vocational Training (CTEVT) को स्थापना भयो । तर CTEVT को प्राविधिक तथा व्यवसायिक शिक्षामा लक्षित समुदायको यथेष्ट पहुँच नभएको परिवेशमा सामाजिक न्यायका दृष्टिले लक्षित समुदायको पहुँच वृद्धि गर्नुपर्ने तथ्यलाई हृदयङ्गम गरिएको छ । प्रस्तुत सन्दर्भलाई शिक्षा विभागले २०७० सालदेखि १०० वटा विद्यालयमा परीक्षणको रूपमा ५ वटा प्राविधिक तथा व्यवसायिक विषयको पठनपाठन सुरु गरिएको छ । हाल प्राविधिक तथा व्यवसायिक विषयमा पठन पाठन गर्ने विद्यालयको संख्या २४० पुगेको छ । विद्यालयतहमा परीक्षणको रूपमा लागू गरिएको प्राविधिक तथा व्यवसायिक शिक्षा कसरी सञ्चालन भइरहेको छ ? नीति तथा कार्यक्रमहरूको कार्यान्वयनको अवस्था कस्तो छ ? सिकाई प्रकृया कसरी सञ्चालन भइरहेको छ ? कार्यक्रमका सबल पक्षहरू के के हुन् ? कार्यक्रममा के कस्ता समस्या तथा चुनौतिहरू छन् ? कार्यक्रमलाई अझ गुणस्तरीय बनाउदै लक्षित वर्गको पहुंच विस्तार गर्न के कस्ता मार्गदर्शन अवलम्बन गर्न सकिएला ? आदि जस्ता प्रश्नहरूको उत्तर खोजी गरी कार्यक्रमको सुधार र विस्तारका लागि आधार तयार गर्नुपर्ने आवश्यकतालाई महसुस गरी शिक्षा विभाग मार्फत प्रस्तुत अनुसन्धान सम्पन्न गरिएको हो ।

उद्देश्य

यस अध्ययनको मुख्य उद्देश्य विद्यालय तहको वर्तमान संरचना भित्र छुट्टै धारको रूपमा प्राविधिक तथा व्यवसायिक शिक्षा कक्षिको सान्दर्भिक छ भन्ने प्रश्नको उत्तर खोज्नु हो । यस अध्ययनका मुख्य उद्देश्य :

१. विद्यालयको संरचना भित्र छुट्टै धारको रूपमा संचालित प्राविधिक तथा व्यवसायिक शिक्षासँग सम्बन्धित नीतिगत प्रावधानको विश्लेषण गर्नु,

२. विद्यालयको संरचना भित्र माध्यमिक तह (९-१२) मा संचालित प्राविधिक तथा व्यवसायिक शिक्षामा लागू गरिएको पाठ्यक्रमले विद्यार्थीलाई रोजगार बजारका लागि तयारी पार्न र उच्च शिक्षामा जानका लागि अवसर प्रदान गर्न उपयुक्त भए नभएको विश्लेषण गर्नु,

३. नीति र कार्यान्वयन बीचको रिक्तताको विश्लेषण गर्नु,

४. कार्यक्रमको गुणस्तरको लेखाजोखा गर्नु,

५. कार्यक्रमको भौतिक र शैक्षिक पक्षको यथार्थ अवस्था चित्रण गर्नु,

६. वर्तमान अवस्थामा कार्यक्रममा देखिएका समस्या तथा चुनौति उजागर गर्नु,

७. कार्यक्रमको भावि दिशाका लागि रणनैतिक मार्गहरू खोजी गर्नु ।

अध्ययन विधि

प्रस्तुत अध्ययनका उद्देश्यहरूले माग गरे अनुसार मिश्रीत अध्ययन विधिको अवलम्बन गरी सूचना संकलन र विश्लेषण गरिएको थियो । नीति निर्माता, नीतिगत दस्तावेज, कार्यान्वयन निकाय र कार्यान्वयन तहका सरोकारवालाहरू सूचनाका स्रोत थिए । संरचित तथा अर्धसंरचित सर्वेक्षण फारम, कक्षा अवलोकन फारम, अर्धसंरचित अन्तरवार्ता, निर्देशिका, लक्षित समुहको छलफल निर्देशिकाको प्रयोगद्वारा प्राथमिक सूचनाहरू संकलन गरिएको थियो । सर्वेक्षण, अन्तरवार्ता र लक्षित समुह छलफलका क्रममा भएको प्रत्यावर्तनलाई फिल्ड नोटको रूपमा टिपोट गरिएको थियो । प्राप्त भएका परिमाणात्मक तथ्याङ्कहरूलाई एक्सल सिटमा इन्ट्रि गरीयो भने गुणात्मक सूचनाहरूलाई लिपिबद्ध गरी विभिन्न शीर्षक उपशीर्षक पहिचान गरी ती शीर्षक उपशीर्षकमा सूचनाहरूलाई व्यवस्थित गरियो । गुणात्मक तथा परिणात्मक अध्ययन विधिको परम्परामा निर्धारित उद्देश्यहरू र सूचनाको स्वरूपमा आधारित भई तथ्याङ्क/सूचनाबाट अर्थ निर्माण गर्ने, व्याख्या विश्लेषण गर्ने र प्रस्तुतीकरण गर्ने जस्ता कामहरू गरियो ।

प्राप्तीहरू

१. **विद्यार्थी भर्ना:** शैक्षिक पद्धतिका पक्षहरू (लगानी, प्रकृया र प्रतिफल) मा आधारीत भई हेर्दा धेरै जसो विद्यालयमा ४८ जनाको विद्यार्थी कोटा पुरा भएको देखिन्छ भने तराइका धेरै जसो विद्यालयमा कोटा पुरा भएका छैनन् । यस तथ्यले प्राविधिक शिक्षामा लक्षित वर्गको पहुंच नभएको देखाउँछ । प्राय: सबै विद्यालयमा प्रवेश परीक्षा लिई विद्यार्थी भर्ना गरिएकाले पनि पहुंचमा प्रश्न चिन्ह खडा हुन गएको देखिन्छ ।

२. **व्यवस्थापन**

२.१ शिक्षक व्यवस्थापन : विद्यालयले यत्नपूर्वक शिक्षकको व्यवस्थापन गरेका छन् । शिक्षकहरू आउनेजाने क्रममा निरन्तरता छ । शिक्षक छनौट प्रकृया झन्झटिलो, लामो र खर्चिलो देखियो जसले शैक्षणिक क्रियाकलापमा जटिलता ल्याइदिएको छ । शिक्षकले छोटा अवधिका (बढीमा १० दिन सम्मको) तालिम पाएको देखिन्छ तर यति छोटो अवधिमा शिक्षण सम्बन्धी ज्ञान सीप आर्जन गर्न सकिदैन । विधिशास्त्रीय ज्ञान सिपको अभावमा कसरी शिक्षण प्रभारकारी होला ? पेशागत स्थायित्व नभएकाले उत्प्रेरणामा असर परेको देखिन्छ ।

२.२ व्यवस्थापकिय स्थिति : धरैजसो विद्यालयको सुशासनको अवस्था राम्रो देखियो भने केही विद्यालय (सप्तरी, धनुषधाम) को शासकीय स्वरूप अपारदर्शी र संकासपद देखियो । जहाँ प्र.अ.हरू बढी सक्रीय र पारदर्शी छन् त्यहां सामुदायीक सहयोग राम्रो भएको देखियो । केही विद्यालयका प्र.अ. हरूको गतिबिधि प्रति समुदाय, शिक्षक र विद्यार्थी असन्तुष्ट छन् । त्यस्ता प्र.अ हरूले व्यवस्थापन समितीलाई वैधताको छापको रूपमा मात्र प्रयोग गरेको पाइयो ।

३. भौतिक पूर्वाधार: नमूनामा परेका धेरै जसो विद्यालयसँग विद्यालय हाता, खेलमैदान, भवन, फर्निचर, उर्जा जस्ता भौतिक पूर्वाधार प्रयाप्त छन् । केही विद्यालयका भवन निर्माणाधिन छन् र प्राय: सबै विद्यालयमा ल्याव छन् । कक्षा ९ र १० का लागि ल्याव पर्याप्त देखिए पनि ११ र १२ कक्षाका लागि पर्याप्त देखिदैन । केही विद्यालयमा प्रयोगशालामा विद्यार्थीले सिक्ने मौका नपाएको पाइयो । कृषि तथा वन तथा पशु विज्ञानका लागि आवश्यक पूर्वाधार भएको देखियो । प्राय: सवै विद्यालयमा पुस्तकालय छन् तर पुस्तकालयको व्यवस्थापकीय पक्ष कमजोर भएकाले विद्यार्थीहरूले त्यसबाट यथेष्ट लाभ लिन पाएका छैनन् ।

४. **लागनी :** प्राविधिक धार तर्फ हालसम्म राज्यको लगानी प्रमुख छ । धेरै जसो विद्यालय राज्यको लगानीमै निर्भर छन् । केही विद्यालयमा गैर सरकारी संस्थाहरूले सहयोग गरेका छन् । तराइका केही विद्यालय (बुटवल, बारा, चितवन, धनुषा बेलापट्टी)ले वैकल्पिक आम्दानीका स्रोतहरू विकास गरेका छन् ।

५. **पठनपाठन गतिविधि :** अध्यनका क्रममा गरिएको कक्षा अवलोकनबाट शैद्वान्तिक शिक्षणमा शिक्षकहरूको कार्य क्षमता मध्ययम देखियो । तर प्रयोगात्मक कक्षामा भने धेरैजसो शिक्षकहरूले गरेर सिक्ने अवसर प्रदान गर्न नसकेको देखियो । शिक्षकहरूको फेरबदलले कतिपय विद्यालयका विद्यार्थीले प्रयोगात्मक कक्षाहरू गर्न नपाएको गुनासो गरे । तर पनि इलेक्ट्रिकल इन्जिनियरिङ गर्नेहरू, कृषि र भेटेनरी गर्ने कतिपय विद्यार्थीले रोजगारी पाइसकेका छन् । कतिपयले स्वरोजगारीको अवसर स्वयं सृजना गरी आयआर्जन गर्न थालेका छन् ।

६. **मूल्याङ्कन प्रक्रिया :** साधारण धारकै ग्रीड अनुसार प्राविधिक धारमा प्रश्नपत्रहरू निर्माण गर्नु असान्दर्भिक देखियो । प्रयोगात्मक परीक्षाहरू पनि भाइभामा आधारित भएर लिइने परीपाटि देखिएकाले शैद्धान्तिक नै पाइए । यस प्रकारका परीक्षाहरूले विद्यार्थीको कार्य दक्षता मापन गर्न नसकेको देखिन्छ ।

७. **पाठ्यक्रमः** कक्षा ९ र १० सम्मको प्राविधिक तथा व्यवसायिक शिक्षा हासिल गरेका विद्यार्थीले पनि दिगो जीविकोपार्जनका लागि रोजगार बजारमा ठाउँ पाउनु पर्ने हो । तसर्थ कक्षा ९ र १० को पाठ्यक्रम सीप केन्द्रित हुन खोजेको देखिन्छ । छ वटा साधारण धार तर्फका विषय सहित त्यति नै संख्यामा प्राविधिक तथा व्यवसायिक धारका विषयहरू माध्यामिक तहमा पठनपाठनको लागि राखिएको छ । ११ र १२ कक्षा सञ्चालनमा आएपछिको पाठ्यक्रमको बनौट र छनौट पढाइ निरन्तरतालाई बढावा दिने वा रोजगार मूलक शिक्षामा केन्द्रित हुने भन्ने अन्योलका बीच तयार भएको भान हुन्छ । जसले कक्षा ११ र १२ मा +२ विज्ञान संकाय अर्न्तगतका सम्पूर्ण विषयहरू सहित केवल २/२ सय पुर्णाङ्क मात्र व्यवसायिक विषय पढाइ हुने व्यवस्था गरेको पाइएकाले कक्षा ११ र १२ को पाठ्यक्रम सान्दर्भिक देखिदैन ।

८. **पाठ्यपुस्तकः** नेपालको विद्यालय शिक्षा प्रणलीमा विद्यालयमा भर्ना भएको पहिलो वर्षदेखि नै विद्यार्थीले पाठ्यपुस्तकलाई सिकाइ प्रक्रियाको मुख्य अंगको रूपमा लिएका र सोहि विद्यार्थीमध्येबाट नै आजको प्राविधिक तथा व्यवसायिक शिक्षाको शिक्षणमा पुगेको अवस्था रहेकोले विद्यालयमा पाठ्यपुस्तक सम्बन्धी बढ्दो माग पाइयो । शिक्षकहरूले विषयवस्तु प्रस्तुतिको गहिराइको तह फरक रहेको अवस्था उजागर गरे ।

सुझावहरू तथा कार्ययोजना

१. **विद्यार्थी भर्ना :** यस धारको शिक्षाले कमजोर आर्थिक तथा नाजुक शैक्षिक पृष्ठभूमी बोकेका विद्यार्थीको विद्यालय छोड्ने र कक्षा दोहोऱ्याउने दर घटाउने र उनीहरूलाई रोजगार बजारका लागि तयार पार्ने उद्देश्य बोकेको देखिन्छ । तर लक्षित समूहका धेरै विद्यार्थीले यस शिक्षामा प्रवेश पाउन सकिरहेको देखिएन । समतामूलक भर्ना र यस धारले बोकेको लक्ष प्राप्तिका लागि आरक्षण प्रणालीको थालनी गर्नु उपयुक्त देखिन्छ । जसले गर्दा बालिकाहरू, सिमान्तकृत समुदाय, कमजोर र औषतभन्दा कम पढाइ उपलब्धि भएका विद्यार्थीको यस शिक्षामा प्रतिनिधित्व सुनिश्चित गर्न सकिने छ ।

२. **व्यवस्थापन**

२.१ शिक्षक व्यवस्थापनः शिक्षक व्यवस्थानका क्रममा निम्न कुराहरूलाई ध्यान दिनु पर्छ ।

क. आइ.एस.सी. र बि.एस.सी शिक्षकहरूलाई विज्ञान विषयको पढाइलाई सहजीकरण गर्न शिक्षण अनुमति पत्र उपलब्ध गराइए जस्तै सुरुका केहि वर्षहरूमा प्राविधिक तथा व्यववसायिक शिक्षकहरूलाई कम्तीमा २ वर्ष अध्यापन गरिसके पछि शिक्षण अनुमति पत्रका लागि योग्य ठानिनु पर्छ ।

ख. हाल प्रचलनमा रहेको प्राविधिक तथा व्यवसायिक शिक्षक नियुक्ति प्रक्रिया झन्झटिलो र खर्चिलो देखिएको हुँदा यसलाई सरल बनाइनु पर्ने आवश्यक देखिन्छ ।

ग. शिक्षा मन्त्रालय तथा एनसिइडिले विश्वविद्यलयहरूसँग समन्वय गरी प्राविधिक तथा व्यवसायिक विषय शिक्षणका लागि शिक्षक विकास गर्ने कार्यक्रम संचलनमा ल्याउनु पर्छ ।

घ. स्थानीय स्तरमा उपलब्ध सम्बन्धित विषयका निवृत्त विज्ञ, शिक्षक, प्राध्यापक वा अन्य कर्मचारीहरूलाई आंशिक शिक्षकका रूपमा काम गर्न पाउने वातावरणको सृजना गरिनु पर्छ ।

ङ. शैक्षिक सत्रको सुरुमा प्राविधिक तथा व्यवसायिक शिक्षकहरूका लागि अभिमुखीकरणको कार्यक्रम सञ्चालन गरेर पाठ्यक्रम, स्रोत व्यवस्थापन, मूल्याङ्कन प्रक्रिया, शिक्षण योजना, आदि विषयमा उनीहरूलाई विस्तृत जानकारी उपलब्ध गराइनु पर्छ ।

च. प्राविधिक तथा व्यवसायिक विषय शिक्षण गर्ने शिक्षक र साधारण धारका शिक्षकहरू बीच विद्यालयमा द्वन्द्वात्मक परिस्थितिहरू (कम-बेसी घण्टी, प्राविधिक-अप्राविधिक, स्थायी-अस्थायी) सृजित हुँदै गरेको अवस्था उजागर भएको हुँदा प्र.अ.ले उक्त अवस्थालाई सहजतामा बदल्न र दुबै धार बीच समन्वयात्मक सम्बन्ध स्थापित गर्न प्रभाकारी सहजकर्ताको भूमिका निभाउन विशेष पहल गर्नु पर्छ ।

छ. प्राविधिक तथा व्यवसायिक विषय शिक्षण गर्ने शिक्षकहरूलाई पनि स्थायी शिक्षकका रूपमा नियुक्ति दिन सकिएमा यी शिक्षकहरूको स्थायित्व बढाउन सकिने छ ।

ज. हालको अवस्थामा प्राविधिक तथा व्यवसायिक शिक्षक विकास गर्न छोटो अवधिका पाठ्यक्रमहरू बनाएर लागू गर्न सकिन्छ ।

झ. अस्थायी तथा करारमा राखिएका प्राविधिक तथा व्यवसायिक विषय शिक्षण गर्ने शिक्षकहरूले पठनपाठनको निश्चित चक्र पार गरेपछि उनीहरूका लागि ग्रेड दिने परिपाटी विकास गर्न सकिएमा उनीहरूको पेशा प्रतिको लगनशिलता बढाउन सकिने छ ।

ञ. आफूलाई योग्य बनाउनका लागि तुलनात्मक रूपमा प्राविधिक तथा व्यवसायिक विषय शिक्षण गर्ने शिक्षकहरूले बढी लगानी र परिश्रम गर्नुपर्ने हुनाले उनीहरूलाई वेतनका अतिरिक्त विशेष भत्ताको पनि व्यवस्था गर्न सकिएमा यसलाई न्यायोचित मान्न सकिन्छ ।

ट. प्राविधिक तथा व्यवसायिक विषय अध्ययन गरेका व्यक्तिहरूबाट समाजले फरक अपेक्षा राखेको हुनाले उनीहरूले शिक्षण पेशा अपनाउँदा हिनताबोधको सिकार हुनु परेको अवस्था देखिन्छ । यस अवस्थामा प्राविधिक तथा व्यवसायिक धारलाई इन्जिनियर, पशु चिकित्सक, कम्प्युटर इन्जिनयर जस्ता व्यक्तिहरूले नै पढाउनु पर्ने शिक्षा हो भन्ने आसयको प्रचार प्रसार गरी एउटा छुट्टै कार्यक्रमका रूपमा स्थापित गराउन सकिएमा शिक्षक व्यवस्थापन सहज हुन जान्छ ।

ठ. टि.आइ.टि.आइ.लाई यस क्षेत्रमा अझ बढी प्रभावकारी बनाइनु पर्छ ।

२. २ **व्यवस्थापकीय सुधारः** अवलोकन गरिएका विद्यालय मध्ये केहि विद्यालयको व्यवस्थापन पक्ष कमजोर देखियो । यसका पछाडिका कारण प्र.अ.हरूमा इमान्दारिता र प्रतिवद्धताको अभाव, अपारदर्शी तथा एकल निर्णय प्रवृत्ति, दलीय राजनैतिक हस्तक्षेप, लोभिपापी मन थिए । पेशागत इमान्दारिता, प्रतिवद्धता र जवाफदेहिताको स्वबोध बाहेक यो समस्याको समाधानका अरु उपाय के हुन सक्लान र ?

३. **भौतिक पूर्वाधारः** कुनै पनि विद्यालयलाई प्राविधिक तथा व्यवसायिक शिक्षा सञ्चालनको स्विकृति दिँदा स्विकृति पाएको चारवर्ष भित्र यस धारको सञ्चालनका लागि आवश्यक सम्पूर्ण भौतिक पूर्वाधार सम्पन्न भइसक्नु पर्ने

वाध्यात्मक सर्त राख्नै पर्ने देखिन्छ । यसका लागि सरकारी स्तरबाट उपलब्ध गराइने सम्पूर्ण आर्थिक स्रोत समयमा नै विद्यालयलाई उपलब्ध गराइनु पर्दछ । दिइएको अवधि भित्र भौतिक पूर्वाधार पूरा गर्न नसक्ने विद्यालयलाई भौतिक पुर्वाधार सम्पन्नताको आधारमा थप छ महिनाको समय दिन सकिने छ र सो अवधिमा पनि कार्य सम्पादन गर्न नसके यस्ता विद्यालयको प्राविधिक तथा व्यवसायिक शिक्षा सञ्चालनको स्विकृति खारेज गरिनु पर्दछ । विद्यालयको पूर्वाधार क्षमता मापनको लागि आवश्यक इन्डीकेटरहरू बनाइनु पर्दछ र चार वर्ष भित्र पनि पूर्वाधार पुरा हुन वा गराउन नसक्ने क्षमता बोकेका विद्यालयलाई प्राविधिक तथा व्यवसायिक शिक्षा सञ्चालनको स्विकृति दिइनु हुँदैन । पूर्वाधार बनाउने प्रक्रियामा रहेका र पर्याप्त आवास सुविधा उपलब्ध गराउन नसक्ने विद्यालयलाई आवास सुविधा सञ्चालनको अनुमति दिइनु हुँदैन ।

४. **लागनी:** सम्पूर्ण विद्यालय केन्द्रबाट दिइने वजेटमा निर्भर भएको पाइएकाले निर्धारण गरिएको वजेट समयमा विद्यालयमा पुग्न सकेमा धेरै समस्या समाधान हुने अवस्था देखिन्छ । यसका अतिरिक्त निम्न कुरालाई मध्यनजर गर्नु आवश्यक छ :

क. आयआर्जन कम भएकाहरू, गरीब, अल्पसंख्यक, सिमान्तकृत समूहहरूका लागि सामाजिक न्यायका दृष्टिले यो शिक्षा पूर्णरूपले निशुल्क हुनु पर्दछ । यदि राष्ट्रले सक्ने हो भने यस्ता विद्यार्थीका लागि छात्रवृत्तिको व्यवस्था पनि गर्नु पर्दछ ।

ख. लगानी गर्न सक्नेहरूको हकमा अभिभावकहरूको सहमतिमा र औचित्यका आधारमा विद्यालयले निश्चित शुल्क उठाउन पाउनु पर्छ ।

ग. शुल्कका आधारहरू र शुल्क रकमको अधिकतम र न्यूनतम सिमा निर्धारण शिक्षा विभागले गरीदिनु उपयुक्त हुन्छ ।

५. पठनपाठन गतिविधि:

५. १ सिकाइ विधिहरू:

पाठ्यक्रम बनाउने क्रममा नै प्रत्येक संकायका प्राविधिक तथा व्यवसायिक शिक्षा सञ्चालनको क्रममा आवश्यक पर्ने प्रयोगात्मक सामग्री र शिक्षण सामग्रीको सूचि तयार पारी विद्यालयलाई उपलब्ध गराउनु पर्छ । शैद्धान्तिक पठनपाठन प्रक्रिया भन्दा पनि प्रयोगात्मक पठनपाठन प्रक्रियालाई बढी जोड दिइनुपर्ने हुन्छ । यसका लागि निम्न प्रकारका पाठनपाठन गतिविधि नियमित सञ्चालन गर्नु आवश्यक देखिन्छ ।

क. अन्वेषण प्रद्धति

ख. कल्पना र सोच

ग. प्रशंसनीय खोज

घ. विद्यार्थी केन्द्रित शिक्षण

ङ. विविधतामा आधारित शिक्षण, आदि ।

५.२ सिकाइ प्रक्रियाको न्यूनतम मापदण्ड निर्धारण: प्राविधिक विषयको शिक्षण र त्यससँग सम्बन्धित विषयमा शिक्षा विभागले न्यूनतम मापदण्ड निर्धारण गर्नुपर्छ । जस्तै एउटा प्राविधिक तथा व्यवसायिक विषय शिक्षकले दैनिक कति घण्टा काम गर्ने ? वार्षिक कति घण्टा पढाइ हुने ? विद्यालय दैनिक कति घण्टा सञ्चालन हुने, कक्षा कोठामा के के सिकाइ सामग्री हुनुपर्ने ? शिक्षकले के कस्ता विधिद्धारा सिकाइलाई व्यवस्थित गर्ने, शैद्धान्तिक र प्रयोगात्मक

कक्षाका न्यूनतम आवश्यकता के के हुनु पर्ने आदि जस्ता न्यूनतम मापदण्ड तयार पारी लागू गर्नुपर्ने देखिन्छ । यसका लागि निम्न प्रक्रिया अपनाउन सकिन्छ ।

क. प्राविधिक शिक्षाको अनुगमन गर्न प्रान्तीय तहमा अनुगमन र सुपरीवेक्षण प्रविधि तयार गर्ने,

ख. सिकाइमा विद्यार्थीको सकृय सहभागिताको सुनिश्चितताको लागि शिक्षकहरूलाई शैक्षिक सत्रको सुरुमा नै अभिमुखीकरण तालिम उपलब्ध गराउने,

ग. प्राविधिक तथा व्यवसायिक शिक्षाको शैक्षिक व्यवस्थापनका लागि सम्बन्धित विषय शिक्षण गर्ने अनुभवि सिनियर शिक्षकको नेतृत्वमा प्राविधिक तथा व्यवसायिक विभाग खडा गरी शैक्षिक व्यवस्थापनको जिम्मेवारी दिने,

घ. प्राविधिक तथा व्यवसायिक धारका शिक्षकहरू र विभाग प्रमुखको जव डिस्क्रिप्सन बनाइ कार्यान्वयन गर्ने,

६. **मूल्याङ्कन प्रक्रियाः** मुल्यांकन प्रक्रिया ६० प्रतिशत प्रयोगात्मक र ४० प्रतिशत शैद्धान्तिक गरी प्रत्येक विषयमा १०० प्रतिशतको हुनु पर्ने छ । यस प्रक्रियामा निम्न तरिकाले मूल्याङ्कन गरिनु पर्दछ ।

क. कार्य सम्पादनमा आधारित मूल्याङ्कन प्रणालीको थालनी गरिनु पर्दछ । जस्का लागि निम्न प्रकारका वर्गीकरण यथोचित हुनेछन् :

अ. ल्याव वर्क १० प्रतिशत

आ. फिल्ड वर्क १० प्रतिशत

इ. पोर्टफोलियो १० प्रतिशत (वर्ष भरि गरिएका अतिरिक्त कार्यहरूको संकलन)

ई. समस्या समाधान प्रतिवेदन १० प्रतिशत

उ. अन्वेषण, सिम्युलेसन वा क्रिएसन २० प्रतिशत

ख. आन्तरिक मूल्याङ्कनका मापदण्डहरू तयार पारिनुपर्दछ । (जस्तै नियमितता, कक्षामा भागलिने, अनुशासन, प्रयोगात्मक परीक्षा, लिखित परीक्षा, भाइभा, इत्यादि)।

ग. प्रत्येक महिना सुधारात्मक परीक्षा सञ्चालन गरी विद्यार्थीलाई उचित फिडव्याक दिनु पर्दछ ।

घ.बाह्य परीक्षामा साधारण धार तर्फको जस्तो अति छोटा प्रश्न सान्दर्भिक देखिएनन् । तसर्थ छोटो उत्तर आउने प्रश्नहरू र लामो उत्तर आउने प्रश्नहरूको अंकभार परिमार्जन गर्नु पर्छ ।

ङ. यस वर्षको कक्षा ११ को (सिभिलत तर्फ) वाह्य परीक्षाको अंकनमा कमजोरी भएको धेरै गुनासाहरू प्राप्त भएकाले अंकन गर्ने (स्कोरिङ) प्रद्धतिलाई दोहोऱ्याएर हेर्न आवश्यक देखिन्छ ।

७. **पाठ्यक्रम :** कक्षा ११ र १२ मा +२ विज्ञान संकाय अर्न्तगतका सम्पूर्ण विषयहरू सहित केवल २/२ सय पुर्णाङ्क मात्र व्यवसायिक विषय पढाइ हुने व्यवस्था गरेको पाइएकाले ११ र १२ को पाठ्यक्रम शान्दर्भिक देखिदैंन । यी कक्षाहरूका लागि शुद्ध विज्ञान (Pure Science) का विषयहरू हटाएर प्रायोगिक विज्ञान (Applied Science) को पाठ्यक्रम निर्माण गरेर कार्यान्वयन गर्नु सान्दर्भिक देखिन्छ । तसर्थ निम्न प्रकारको परिमार्जन अघि सारिएको छ ।

परिवर्तित पाठ्यक्रममा संलग्न गराउन सकिने परिमार्जित विषयहरू (कक्षा ९ र १०)

क्र.सं.	कक्षा ९ र १० का हालका विषयहरू	सुझाव गरिएका विषयहरू	क्र.सं.
१.	नेपाली	नेपाली (कक्षा ९ र १० मा)	१
२.	गणित	गणित (कक्षा ९ र १० मा)	२
३.	अंग्रेजी	अंग्रेजी (कक्षा ९ र १० मा)	३
४.	विज्ञान	विज्ञान (कक्षा ९ र १० मा)	४
५.	सामाजिक	सामाजिक (कक्षा ९ र १० मा)	५
६.	जनसंख्या, स्वास्थ्य र वातावरण	आवश्यकता अनुसार परिमार्जन गर्ने	
७.	प्राविधिक तथा व्यवसायिक १	प्राविधिक तथा व्यवसायिक १ (कक्षा ९ मात्र)	६
८.	प्राविधिक तथा व्यवसायिक २	प्राविधिक तथा व्यवसायिक २ (कक्षा ९ मात्र)	७
९.	प्राविधिक तथा व्यवसायिक ३	प्राविधिक तथा व्यवसायिक ३ (कक्षा ९ मात्र)	८
१०.	प्राविधिक तथा व्यवसायिक ४	प्राविधिक तथा व्यवसायिक ४ (कक्षा १० मात्र)	६
११.	प्राविधिक तथा व्यवसायिक ५	प्राविधिक तथा व्यवसायिक ५ (कक्षा १० मात्र)	७
१२.	प्राविधिक तथा व्यवसायिक ६	प्राविधिक तथा व्यवसायिक ६ (कक्षा १० मात्र)	८

परिवर्तित पाठ्यक्रममा संलग्न गराउन सकिने परिमार्जित विषयहरू (कक्षा ११ र १२)

क्र.सं.	कक्षा ११ र १२ का हालका विषयहरू	सुझाव गरिएका विषयहरू	क्र.सं.
१.	नेपाली	नेपाली	१
२.	अंग्रेजी	अंग्रेजी	२
३.	फिजिक्स	सिभिलका लागि व्यवहारिक विज्ञान I & II	३
४.	केमेस्ट्रि	कम्प्युटरका लागि व्यवहारिक विज्ञान I & II	
५.	बायोलोजी / गणित	प्लान्ट साइन्सका लागि व्यवहारिक विज्ञान I & II	
		एनीमल साइन्सका लागि व्यवहारिक विज्ञान I & II	
		इलेक्ट्रिकलका लागि व्यवहारिक विज्ञान I & II	
६.	प्राविधिक तथा व्यवसायिक १	प्राविधिक तथा व्यवसायिक १	४
७.	प्राविधिक तथा व्यवसायिक २	प्राविधिक तथा व्यवसायिक २	५
८.	अतिरिक्त गणित (ऐ.)	प्राविधिक तथा व्यवसायिक ३	६
		प्राविधिक तथा व्यवसायिक ४	७
		सिभिल, इलेट्रिकल, कम्प्युटर का लागि गणित	८

माथि उल्लेखित संख्याका विषयहरूले प्राविधिक तथा व्यवसायिक धारलाई बढी सान्दर्भिक बनाउनका साथै विद्यार्थीमा परेको पाठ्यक्रमको भारलाई पनि घटाउने छ । यसका अतिरिक्त जम्मा १२०० घण्टाको ओजेटी (OJT) राखिनु आवश्यक देखिन्छ जसलाई माध्यामिक तहका प्रत्येक कक्षामा ३०० घण्टा अनिवार्य गर्नु पर्ने हुन्छ । यसले विद्यार्थी, अभिभावक, शिक्षक तथा सरोकारवालाहरूले उठाएको समस्याको समाधान दिने छ । उच्च शिक्षा हासिल चाहने विद्यार्थीले वायोलोजी र केमेस्ट्री (अतिरिक्त विषयका रूपमा) परीक्षा दिएर भेटनरी साइन्स वा प्लान्ट साइन्स सम्बन्धित साइन्सहरू वा वायोलोजी सम्बन्धित साइन्समा प्रवेश गर्न सक्ने छन भने फिजिक्स र केमेस्ट्रीको परीक्षा अतिरिक्त विषयमा दिएर इन्जिनियरिङ वा फिजिक्ससँग सम्बन्धित विषयको उच्च शिक्षामा जान सक्ने छन् ।

माथि उल्लिखित सुझावले एसएसडिपि, एसएसआरपी, सिटिइभिटि, टिभिइ गाइडलाइन्स आदि जस्ता दस्तावेजहरूले कल्पना गरेको बजारका लागि मध्यम तहका जनशक्ति तयार पार्ने भावनालाई पनि मुखरित गर्नेछ । अर्को तर्फ यस प्रकारको परिमाजर्नले उच्च शिक्षामा पहुँचका लागि भर्‍याङको काम गर्नेछ ।

यस सन्दर्भमा निम्न कुराहरूलाई ध्यान दिनु पर्ने देखिन्छ :

क. पाठ्यक्रमलाई होरिजेन्टल्ली र भर्टिकल्ली व्यवस्थापन गर्न विशेष प्रयास गरिनु पर्छ ।

ख. कक्षा ९ र १० को पाठ्यक्रम परिमार्जन पश्चात तुलनात्मक रूपमा सन्तोषजनक देखिए तापनि कक्षा ११ र १२ को पाठ्क्रम विद्यार्थीको उमेर र क्षमताको दृष्टिले बढी नै स्तरीय देखिन्छ । तसर्थ, यसको परिमार्जन आवश्यक छ ।

ग. केन्द्रिय, क्षेत्रीय र प्रान्तीय स्तरमा अनुभवि शिक्षकहरूको गोष्ठी आयोजना गरी उनीहरूले दिएको इनपुटको आधारमा पाठ्यक्रम परमार्जन गरिनु पर्दछ ।

घ. शिक्षणशास्त्रमा जानकार र सिपालु व्यक्तित्वहरूलाई पाठ्यक्रम विकास अंगमा समावेश गराउनु आवश्यक छ ।

ङ. पाठ्यक्रममा सफ्टवेर र प्रयोगात्मक गतिविधिहरूसँग सम्बन्धित विषयवस्तुहरू समावेश गराइनु पर्छ ।

च. कक्षा ११ र १२ मा शुद्ध विज्ञानसँग भन्दा पनि व्यवहारिक विज्ञानसँग सम्बन्धित विषयहरूलाई बढी जोड दिनु पर्छ ।

छ. प्राविधिक विषयका विभिन्न क्षेत्रमा ऐक्षिक गणितले अनिवार्य गणितलाई प्रतिस्थापन गर्न सक्दछ । यसका अतिरिक्त, ऐक्षिक गणित र अनिवार्य गणितका विषयवस्तुलाई एकतृत गरी प्राविधिक तथा व्यवसायिक विषय सुहाउँदो गणितको विकास गर्न सकिन्छ ।

ज. एउटै कक्षाका विभिन्न विषयमा दोहोरिने विषयवस्तुहरू जस्तै इन्जिनियरिङ ड्रइङ र मेकानिकल डिजाइनलाई एकतृत गरी एक विषयका रूपमा शिक्षण गर्न सकिन्छ ।

झ. शिक्षक निर्देशिका बनाउने जिम्मा पनि पाठ्यक्रम बनाउने विशेषज्ञलाई दिनु पर्छ र यस्तो निर्देशिका पढाइ सुरुहुनु अगावै शिक्षकहरूको हातहातमा पुगेको हुनुपर्छ ।

ञ. प्राविधिक तथा व्यवसायिक धारका प्रत्येक संकायका विद्यार्थीले प्रयोगात्मक निर्देशिका प्राप्त गरेको हुनु पर्छ । केहि विद्यालयमा यस्तो प्रयासको थालनी गरिएको पाइएको हुँदा सोहि कुरालाई अन्य विद्यालयले पनि अनुसरण गर्न गराउन सकिन्छ ।

८. पाठ्यपुस्तक

विद्यायलमा पाठ्यपुस्तहरू जे जसरी लागू गरिएको भए तापनि प्राविधिक तथा व्यवसायिक धार तर्फको माध्यामिक तहको पठनपाठन पाठ्यक्रममा आधारित छ । शिक्षक तथा विद्यार्थीमा पाठ्यपुस्तकका बारेमा मिश्रित धारणा

पाइएकाले पाठ्यपुस्तक भन्दा पाठ्यक्रमबाट नै पठनपाठन गराउनु उचित देखिन्छ । यसरी पठनपाठन गरिदा तल उल्लेखित सकारात्मक पक्षहरू पाइएका छन् :

क. विद्यार्थीले खोजेर पढ्ने वातावरण पाएका छन् ।

ख. शिक्षकहरूलाई अध्ययनशील बनाएको छ ।

ग. शिक्षण तथा सिकाइमा प्राविधिको प्रयोगलाई प्रोत्साहन गरेको छ ।

घ. घोकन्ते विद्यालाई निरुत्साहित गर्दैछ ।

ङ. विद्यार्थीहको पढाइलाई पाठ्यपुस्तक भन्दा पनि आत्म निर्भर हुने अवसर सृजना गर्दैछ ।

९. ओजेटि

प्राविधिक धारको अन्त्यमा गर्नुपर्ने OJT प्रतिको नीति स्पष्ट नहुँदा सरोकारवालाहरू प्रताडित छन् । OJT लाई व्यवस्थित गरी कक्षा ९–१२ सम्मै जम्मा आवर (जस्तै १२०० घण्टा) को OJT गर्ने र प्रत्येक कक्षामा ३०० घण्टाको दरले वितरण गर्दा सान्दर्भिक हुने देखिन्छ । तसर्थ, तलको मोडेल प्रस्तुत गएिको छ :

ओजेटि मोडेल	
ओजेटिलाई १२०० घण्टाको बनाइनु पर्दछ कक्षा ९ = ३०० घण्टा कक्षा १० = ३०० घण्टा कक्षा ११ = ३०० घण्टा कक्षा १२ = ३०० घण्टा क. ओजेटि गरिने ठाउँमा लगबुक को व्यवस्था गरिनु पर्छ ।	ख. सो लगबुक प्रत्येक दिन इन्टर्नले गरेको मुख्य उपलब्धिको विवरण सहित मेन्टरले हस्ताक्षर गर्नु पर्छ । ग. विद्यार्थीले लामो विदाको समयमा वा अन्तिम परीक्षा पछि ओजेटि गर्ने अवसर सृजना गर्नु पर्छ । घ. ओजेटि लगबुकले अन्त्यमा विद्यार्थीले हासिल गरेका मुख्य उपलब्धिहरू, हासिल गर्न नसककेका कुराहरू र हासिल गर्नै पर्ने उपलब्धिहरूको विस्तृत जाकारी उपलब्ध गराउनु पर्छ ।

१०. अन्य

क. **उद्देश्यः** विद्यालयमा संचालित प्राविधिक तथा व्यवसायिक धारको शिक्षाको उद्देश्य स्पष्ट पारिनु आवश्यक देखिन्छ । धेरै जसो विद्यार्थी रोजगारी भन्दा पनि उच्च शिक्षामा सहज पहुँचलाई आधार बनाएर यस धारको अध्ययनमा आएको देखिन्छ । यसबाट के बुझिन्छ भने यस धारको थालनी मध्यम स्तरका प्राविधिक जनशक्ति उत्पादन गर्नु हो कि प्राविधिक तथा व्यवसायिक शिक्षाको उच्च अध्ययनमा पहुँचलाई सरलिकृत गर्नु हो ? विद्यार्थी, अभिभावक र विद्यालय स्पष्ट हुन सकेका छैनन् । यस धारले मध्यम स्तरका देशलाई चाहिने प्राविधक जनशक्ति उत्पादन गर्ने उद्देश्य राख्नु पर्दछ ।

ख. सञ्चालन स्वीकृति : विद्यालयलाई प्राविधिक तथा व्यवसायिक धारको संचाल स्वीकृति दिने क्रममा आवश्यक ध्यान नपुऱ्याइएको देखिन्छ । तसर्थ निम्न कुराहरूलाई ध्यान दिनु पर्छ ।

अ. पहिलो प्राथमिकता प्राविधिक तथा व्यवसायिक शिक्षा सञ्चालन नभएका जिल्लाहका विद्यालयलाई दिइनु पर्दछ ।

आ. केहि वर्षका लागि जबसम्म परिमार्जित उद्देश्यहरू सहित लक्षित समूहको पहुँमा प्राविधिक तथा व्यवसायिक धारलाई पुऱ्याउन सकिदैन र पूर्णरूपले व्यवस्थित गर्न सकिदैन तबसम्म यो धारको शिक्षा निजि क्षेत्रलाई सञ्चालनको अनुमति दिनु हुँदैन ।

इ. यो शिक्षा ग्रामिण क्षेत्रमा जहाँ लक्षित समुहको बाहुल्यता छ त्यहाँसम्म पुग्नु पर्छ र सो समुदायलाई यस विषयका वारेमा ओरेन्ट गरिनु पर्दछ ।

घ. प्राविधिक तथा व्यवसायिक शिक्षालाई छुट्टै धारका रूपमा केहि वर्ष पछि लान सकिने छ तर त्यसभन्दा अघि विद्यालयका ल्यावहरूलाई व्यवस्थित र स्तरीय बनाइनु पर्दछ साथसाथै यो धार सञ्चालनमा रहेका विद्यालयमा विभागीय जिम्मेवारीको व्यवस्था गरिनु पर्दछ । दोश्रो चरणमा विद्यालय परिसर भित्र वा वरिपरि छुट्टै भवन निर्माण गर्नु पर्छ । यी कार्यसँगै प्राविधिक तथा व्यवसायिक शिक्षाका लागि आवश्यक जनशक्ति पनि विकास गर्दै लगिनु पर्दछ । निजि क्षेत्रसँग सहकार्य गरेर विषय सुहाँदो सहजकर्ता र तालिम प्रदाता उपलब्ध हुन सक्ने ओजेटि सेन्टरहरू पनि निक्यौंल गर्दै जानु पर्दछ । जव यस धारका लागि आवश्यक सम्पूर्ण तयारी समापन हुन्छन् अनि मात्र यसलाई छुट्टै र आत्मनिर्भर धारको रूपमा सञ्चालन गरिनु पर्दछ जसका लागि ८ देखि १० वर्षको समय र योजना आवश्यक पर्दछ ।

ङ. माथि उल्लेखित उद्देश्यहरूको अन्त्यमा नपुग्दासम्म प्राविधिक तथा व्यवसायिक शिक्षालाई निजी क्षेत्रमा जान नदिनु उचित हुन्छ ।

च. नीति तथा अभ्यासका बीचमा अन्तर देखिएको हुँदा सिटिइभिटिले सञ्चालन गरेका डिप्लोमा संकायको समानान्तर सामुदायिक विद्यालयमा संचालित प्राविधिक तथा व्यवसायिक विषयहरूको औचित्यमा प्रश्न उठेको पनि पाइएको छ । CTEVT ले सञ्चालन गरेका कोर्सहरू शैक्षिक नभएर व्यवसायिक तालिम मात्र रहेको र पछि समन्वय गरी उच्च शिक्षामा जाने बाटो बनाइएको भन्ने कुरा भुलिसकिएको अवस्था भेटियो । तसर्थ विद्यालयमा सञ्चालित प्राविधिक तथा व्यवसायिक विषयहरूलाई व्यापक प्रचार प्रसारमा लैजानु पर्छ ।

छ. CTEVT नियमन अङ्ग भएको हुनाले प्राविधिक तथा व्यवसायिक शिक्षालाई रेगुलेट गर्न, नियम बनाउन तथा अनुगमन गर्ने काम गर्न सक्छ । तर विश्वविद्यालयले जस्तो परीक्षाको काम, सम्बन्धन दिने नभइ नियमन गर्ने कार्य गर्न सक्छ । पहिले गरिएका निर्णयहरू वा व्यवस्थालाई विद्यालयमा गाभेर गल्ती सच्याउन सकिन्छ ।

ज. नीति तथा अभ्यास बीच समन्वयका लागि ५ वटा फरक समिति र उपसमितिहरू जस्तै केन्द्रिय निर्देशक समिति, केन्द्रिय व्यवस्थापन समिति, केन्द्रिय प्राविधिक समिति, क्षेत्रिय समन्वय समिति र जिल्ला कार्यकारी समितिहरू बनाइएको पाइयो । यसरी बनाइएका यस्ता समितिहरू अति शैद्धान्तिक र भद्रगोल पनि देखिन्छन् । माथिका तीनवटा समितिमा उच्चपदस्थ सरकारी कर्मचारीहरू रहेका हुनाले विभिन्न विभागका दैनिक कार्यमा उनीहरूको व्यस्तता रहेको हुनाले समितिले गर्नु पर्ने कार्यका बारेमा समय दिन नसकेको बुझिन्छ । जसले गर्दा नविनतम अवस्थामा रहेको प्राविधिक तथा व्यवसायिक शिक्षाका सन्दर्भमा समयमा निर्णहरू लिन नसकिएको र भएका निर्णयहरूको कार्यन्वयनलाई उचित अनुगमन गर्न सकिने अवस्था छैन । तसर्थ, कम्तीमा ५ वर्षका लागि एउटा टास्क फोर्स जसमा ५ वटै संकायका विज्ञहरू, पाठ्क्रम विज्ञहरू र प्राविधिक तथा व्यवसायिक शिक्षाका विज्ञहरूको संलग्न रहेको टास्क फोर्स बनाएर तत्काल निर्णय लिन सक्ने र आवश्यक कदम चाल्न सक्ने अधिकार प्रत्योजन गरिनु बढी सान्दर्भिक देखिन्छ ।

झ. शिक्षकहरूको उत्प्रेरणा बढाउन उनीहरूले प्राप्त गर्ने तलब भत्तामा वृद्धि गर्नुपर्ने दखिन्छ । शिक्षकको पेशालाई समेत स्थायित्व प्रदान गर्न लाइसेन्स दिने, सेवा आयोग दिन पाउने व्यवस्थाको सिर्जना गर्नु पर्ने देखिन्छ ।

निष्कर्ष

स्थलगत अध्ययनका आधारमा व्यवसायिक तथा प्राविधिक शिक्षालाई छुट्टै धारको रूपमा विकास गर्न सकिने प्रशस्त सम्भवनाहरू देखिन्छन् । जसका लागि राज्य नीतिगत रूपले स्पष्ट हुनुपर्छ । व्यवसायिक धारलाई छुट्टै विभागको रूपमा लैजानु उपयुक्त देखिन्छ तर यसो गरिनु अगाडि यस धारका लागि छुट्टै भवन हुनु आवश्यक देखिन्छ । सामाजिक न्याय र समताको दृष्टिले प्राविधिक धारले समताको अवस्थालाई विश्वस्त नगराइसक्दासम्म निजीकरण गरिहाल्नु उपयुक्त देखिदैन । तर समता हासिल गर्नका लागि विद्यार्थी भर्नाको नीतिलाई पुनर्विचार गरिनु पर्छ । विभिन्न नीतिहरूमा स्पष्ट उल्लेख भएका CTEVT को भूमिका बारेमा गहिरो अध्ययनको आवश्यकता देखिन्छ । नीतिगत दृष्टिले CTEVT लाई जुनसुकै निकायले सञ्चालन गर्ने वा गरेका TVE को अनुगमन गर्ने र गुणस्तर नियन्त्रण गर्ने अधिकार भएको देखिन्छ । तर दुई छुट्टै (सि.टि.ई.भि.टी. र प्राविधिक धारको माध्यमिक शिक्षा) निकायले एकै उदेश्यका काम फरक फरक रुपमा गरिनुभन्दा दायरा निर्धारण गरी सि.टि.ई.भि.टि.का सम्पूर्ण पूर्वाधारहरु प्राविधिक धारको माध्यामिक शिक्षामा समायोजन गर्न सकिएमा लागत प्रभावकारी (cost effective) हुनेछ ।

यसरी व्यवसायिक तथा प्राविधिक शिक्षाले बोकेका प्रशस्त अवसरहरू समाज, विद्यालय, विद्यार्थी, अभिभावक र सम्पूर्ण सरोकारवालहरूमा झल्किन थालेको अवस्था छ र यसको आवश्यक नीति परिवर्तन सहित अझ अघि जानु पर्ने अवस्था देशभरि नै सृजना भईसकेको छ । यसको कार्यान्वयन योजना निम्न अनुसार हुन सक्ने छ ।

क्र. सं.	के गर्ने?	कसले गर्ने?	कहिले गर्ने?	कसरी गर्ने?
१	**समता** : विद्यालयबाट वाहिर रहेका सिमान्तकृत बालबालिकाहरुलाई विद्यालय शिक्षाको निरन्तरतामा जोड दिन र उनीहरुको प्राविधिक तथा व्यवसायिक शिक्षामा समतामुलक पहुँचका लागि प्रयास गर्ने ।	सरकारले नीति बनाउने र सम्वन्धित निकायहरुले त्यसको प्रभावकारी कार्यान्वयन गर्ने	नयाँ शैक्षिक सत्र प्रारम्भ अगावै	समता हासिल हुँदा सम्मका लागि कोटा र आरक्षण प्रणालीको थालनी गरिनु पर्ने । प्रधानाध्यापक र विद्यालय व्यवस्थापन समितिका सदस्यहरुलाई तालिम प्रदान गर्ने ।
२	**लक्ष** : मद्यम स्तरका सीपयुक्त जनसक्ति विकास गर्नु	विद्यालयहरु	विद्यार्थी भर्ना हुनुभन्दा अगावै	सम्भावित विद्यार्थी तथा उनीहरुका अभिावकहरुलाई यस धारको शिक्षाको उद्देश्य वारे स्पष्ट पार्न भेला गराउने र उनीहरुलाई काउन्सिल गर्ने
३	सिपमुलक पाठ्यक्रम बनाउने	पठ्यक्रम विकास केन्द्र	जतिसक्दो चाँडो	रिपोर्टको टेवल नं १३ र १४ र ९.२ को बुँदा नं. ६ मा दिइए अनुसार
४	प्रयाप्त संख्यामा शिक्षक व्यवस्थापन गर्ने	सरकार	जतिसक्दो चाँडो	रिपोर्टको ९.२ को बुँदा नं. ५ मा दिइए अनुसार

५	सीपमा आधारीत विद्यार्थी मूल्याङ्कन प्रणालीको थालनी गर्ने	विद्यालय र शिक्षकहरु	कोर्ष आवरमा	नियमित मूल्याङ्कन प्रक्रिया अपनाउने, प्रयोगात्मक कार्यहरु दिने र सो कार्य गर्दा विद्यार्थीको निरीक्षण गर्ने, कम्तिमा त्रैमासिक रुपमा वृद्धि भएको विद्यार्थीको क्षमताको अभिलेख राख्ने र प्रदर्शन गर्ने, (सम्वभ भएसम्म साप्ताहिक वा मासिक रुपमा पनि राख्न सकिने), क्षमता परीक्षणमा देखिएका फरकहरुको अभिलेख पनि राख्ने र सुधारात्मक परीक्षा दिने ।
६	CTEVT लाई अनुगमनको सम्पूर्ण जिम्मेबारी दिने न कि स्वीकृति दिने निकाय ।	सरकार	कोर्ष आवरमा	CTEVT ले अनुगमन तथा नियमन कर्ताको भूमिका खेल्ने
७	नेपाल सरकारले वित्तिय सहयोग उपलब्ध गराउने र विद्यालयहरुले आफ्नो श्रोत प्रयोग गरी कोष सृजना गर्ने	नेपाल सरकार र विद्यालयहरु	आवश्यक परेको बेलामा	समयमा नै बजेट निकाशा गर्ने, संचालित कार्यक्रमलाई लक्ष्यमा राखेर विद्यालयसँग उपलब्ध श्रोतहरु, जग्गा, भवनको उच्चतम प्रयोग गरी आम्दानी वढाउने
८	प्रयोगात्मक शिक्षण र सिकाइमा वढी जोड दिने ।	विद्यालय र शिक्षकहरु	कोर्ष आवरमा	उचित प्रयोगशालाको स्थापना साथै विद्यालयसँग उपलब्ध भौतिक श्रोतहरुको उच्चतम प्रयोग गरी आवश्यक सम्पूर्ण अभ्यास सामग्री उपलब्ध गराउने, शिक्षकहरुलाई आवश्यक तालिम तथा प्रवोधीकरण समय समयमा उपलब्ध गराउने ।
९	OJT hours को निरक्यौल गर्ने र उचित समयावधि निर्धारण गर्ने	शिक्षकहरुसँगको सरसल्लाहमा सरकारले	जतिसक्दो चाँडो	रिपोर्टको ९.२ को बुँदा नं. ८ मा दिइए अनुसार