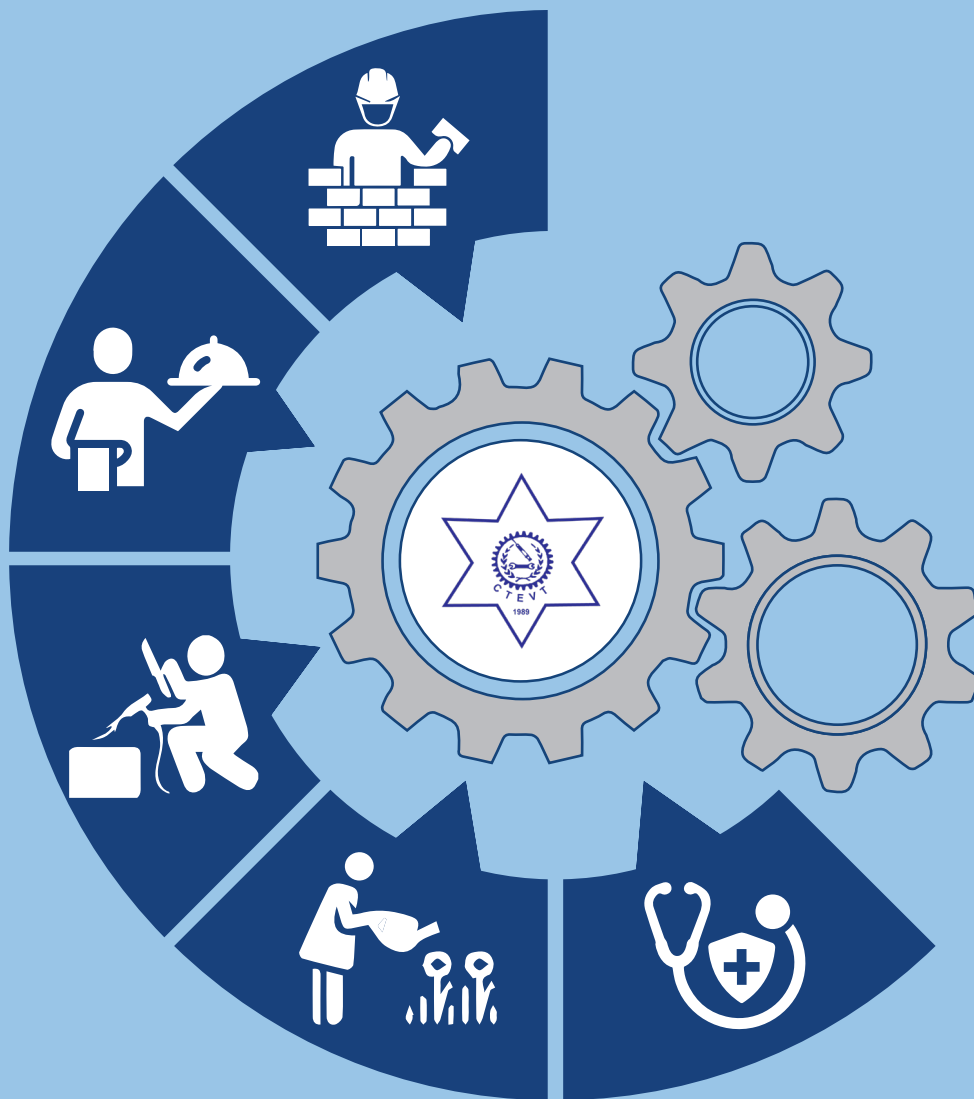


Journal of
**Technical and Vocational
Education and Training (TVET)**



2023

Journal of Technical and Vocational Education and Training (TVET)

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Council for Technical Education and Vocational Training (CTEVT)

Research and Information Division

Sanothimi, Bhaktapur, Nepal

Journal of Technical and Vocational Education and Training (TVET)

ISSN: 2773-8248

Journal of TVET, Vol.17, No. 1, February 2023

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The Journal of Technical and Vocational Education and Training (TVET) uses a double-blind peer review process. The ultimate responsibility of ideas and opinions expressed in these articles rests with the authors.

Published by:

Council for Technical Education and Vocational Training (CTEVT)

Research and Information Division

Sanothimi, Bhaktapur, Nepal

Post Box: 3546 (Kathmandu)

Phone: 00-977-01-6636172, 6630679, 6630408, 5639451

Fax: 00-977-01-6635125

Email: research@ctevt.org.np

Website : <http://www.ctevt.org.np>

TVET to Create Jobs and Spur Development

With the federalism in place, Nepal is striving for economic development and prosperity. The national ambition of '*Prosperous Nepal: Happy Nepali*' is reiterated by all three layers of government, and actors of policy, development and governance sectors. Creation of decent jobs, smooth operation of industries, development and expansion of entrepreneurs are essential to create atmosphere conducive for economic progress. Similarly, production of adequate technical human resources with skills, experiences and expertise prepares strong foundations for industries and economic activities.

CTEVT is an apex body for TVET, which produces competent technical human resources for both domestic and international job markets. Since its establishment in 1989, CTEVT has been providing pre-diploma, diploma, and market-oriented short courses and gradually expanding its programs in various sectors throughout the country. CTEVT's workforce is highly valued in international and domestic markets.

In addition, CTEVT has been connecting academia, researchers, industrialists, policy makers, government officials and other concerned stakeholders by publishing a journal of TVET. It has been given continuity for this year too. However, the editorial team acknowledges the importance of listening to the demands of our readers and giving due respect to the feedback they provide. As a result, we have made some changes to

the format of this edition to better serve our readers. Additionally, we have corrected the volume and issue numbers of this journal due to some errors in previous printings. We strive to provide our readers with the highest quality content and appreciate their continued support and input.

The publication of this journal comes at a time when the country has seen a huge pressure on economy, thereby forcing the government to cut the budget size. The issues raised by the articles incorporated in this edition therefore bear much relevance and significance to prop up national economy and help intensify development activities. The recommendations the articles have made for policy correction, legal reform, development and expansion of entrepreneurships, additional research, enhancement of quality in TVET, strong relations among wider stakeholders of TVET are some of the pertinent ones in the present time. The journal not only helps to build information and knowledge on TVET regime but also substantiates the relevance of CTEVT with timely reforms.

This edition consists of twelve articles. The article, '*Approaching Apprenticeship in Nepal: Lessons from Dual-VET of Germany*' jointly written by Mr. Prakash Kumar Paudel and Dr. Christiane Eberhardt compares the apprenticeship system in Nepal and Germany. They point out the need for enhancing the employment skills of apprentices in Nepal so

as to prepare them as the entrepreneurs and generate avenues for new employment. They argue that the preparation of such skilled human resources in Nepal, however, remains largely supply driven. The comparison they made between Germany and Nepal shows the orientation of Nepali TVET to the German dual system is only useful to a limited extent. The authors claim that Germany's example could not be a reference - especially with regard to key issues that are currently on the political agenda in Nepal.

Another article titled "Researching Informal Skills Learners: Considering Work Interruption and Vulnerabilities" by Dr. Durga Prasad Baral delves into the ethical challenges faced by researchers when studying informal skills. The author argues that informal skills learners are particularly vulnerable and that their vulnerability can be exacerbated by work interruptions caused by the researcher's interaction with them. The study aims to increase researchers' awareness of their responsibilities when working with vulnerable populations, and to provide guidance on how to minimize harm and maximize benefits. This article emphasizes the importance of conducting research in an ethical and responsible manner, taking into account the potential impact of the work on vulnerable populations.

The 'Effectiveness of TVET in Nepal' by Prof. Dr. Ramesh Adhikari, Prof. Dr. Shiva Raj Adhikari, Prof. Dilli Ram Upreti and Prof. Dr. Keshav Prasad Adhikari is another article dwelling on the need to enhance TVET quality

so that employments with good income could be created for many youths. Adopting the concurrent mixed methods, the writers conduct a survey among 1,231 Diploma and Pre-diploma (TSLC) graduates who studied in the institutions either affiliated to or constituent of the CTEVT. Similarly, 42 key informants' interviews (2 from each district) were conducted with key stakeholders. With this, they found a remarkable difference in average income before and after graduation (NRs 1,815 vs NRs 15,656). As per authors, the income difference was highest among the people who studied engineering (NRs 16,005) followed by health (NRs 14,908). The income of male was 1.6 times higher than that of female after graduation.

Likewise, 'Globalization, Global Political Economy and Technical and Vocational Education and Training: A Nexus' by Dr. Sabitri Devi Acharya (Adhikari) underscores the need for the TVET institutes to cater skills to the youths required in the international labor markets in terms of the migrant Nepali workers. She argues globalization is one of the challenges for TVET, and urges the concerned agencies to change TVET curriculum accordingly.

Similarly, 'Effectiveness of Vocational Training on Light Vehicle Mechanics in Underprivileged Children's Educational Program, Nepal', is the article showing the need for regular and up-to-date tools and equipment as per need of the industry. In the article, Mr. Ishwor Rimal further stresses the utilization of library facility and technology

in the teaching- learning methods, industry-institute linkage. Garnering views of the TVET graduates, the author measures the students' satisfaction with physical facilities and school environment.

In the article, 'Work-based Learning through School Production Unit in Polytechnic Institutes', Mr. Harish Singh Thapa emphasizes the sustainability of work-based learning (WBL) in the school production unit, arguing that it helps to foster experiential learning, active learning employability and entrepreneurship skills and increased cooperation/collaboration learning ability of students. To build the argument, author Thapa makes a systemic literature review with synthesis, comparison and contrasts on the approaches of the WBL in the production unit.

Dr. Kushmakar Bhatta, in his article, 'Quality Assurance Agenda in Nepali TVET System', argues that the world is becoming more quality focused, inclusive, and interdependent, and underscores a clear provision of quality assurance in Nepal's TVET system, which is a critical need to meet the demands of learners and the world's marketplace. He has presented examples of best practices in quality assurance based on the secondary data, observation, study, and experiences in the article. He finely outlines and discusses the relevancy, gap and need in Nepal's TEVT system to meet the requirements of competent and competitive human resources for the world of work.

Moreover, in the article, 'Technical and Vocational Education and Training Sector in Federal Nepal: A Critical Analysis', Dr. Usha Bhandari views the urgency of paradigm shift in action, thoughts and visions in line with the constitution to harness the benefit of TVET sector so that the goal of socio-economic prosperity could be achieved in the country. According to her, despite the rights and responsibilities of three tiers of governments stated well by the Constitution 2015, the national and sub-national governments are practicing their rights and responsibilities, thereby warranting activism for effective running of TVET.

Ms. Rojina Basnet and Mr. Chetan Karki Pyakurel in their article, 'Phasing out of Technical School Leaving Certificate Programs in Health: A Scenario Analysis', underscore the need for reconsidering the provision of the National Medical Education Act on re-launching TSLC programs in health so that there will not be scarce of skilled and technically competent mid-level human resource for health. Highlighting the importance of mid-level health workers and effect of phasing out TSLC programs by CTEVT in the health sector of Nepal, the writers argue the removal of the programs may cause less access to the service of skilled health workers, especially of the poor, women, and disadvantaged groups which, they have argued, created inequitable development of skills in the health workforce.

Mr. Bal Mukunda Neupane conducts a Rapid Market Appraisal (RMA) and explores

market prospects or the specific occupational skills in demand in the local markets of Madhesh Province so as to reintegrate the returnee migrant workers into the Nepali economic system. In his article, 'Need of Market-based Skills Training to Create Employment Opportunities for Returnee Migrants in Madhesh Province', Neupane writes based on the collected data from 204 key informants of labor market, 24 different occupations were identified as highly demanding occupations in three occupational sectors: nine were in the construction sector, eight in the agriculture sector, and six in the hospitality/tourism sector. It was also found that the Madhesh Province, having the largest area of cultivated land in Nepal, is very potential for employing a bigger number of youths and returnees in the agriculture sector. He urges the concerned agencies to ensure financial access to the returnee migrants so that agriculture sector could truly be attractive occupation.

Dr. Hari Prasad Lamsal and Mr. Anil Muni Bajracharya make all concerned stakeholders aware that TVET sector faces a host of challenges, including enrollment decline, supply-demand disparity, and concern over quality and relevance. In their article, 'TVET Sector Strategic Plan, 2023-2032: A Drive to Success', authors view the challenges could be addressed through a strategic plan that focuses on improvement of quality in TVET programs, strengthening of governance, and increase in enrollment and participation. Dwelling on a three-phase 10-year plan, they underline comprehensive approach with phase-wise attention and engagement so that TVET sector could be bolstered, thereby

making it a robust base of economic growth and prosperity of the country.

In the article 'Academic Performance of Fee Paying and Scholarship Students at CTEVT Affiliated Nursing Colleges in Nepal', Mr. Khagendra Prasad Adhikari compares the academic performance between the scholarship and fee-paying students of PCL nursing program and explores their perspectives on professional values they imbibe for nursing profession. The study, he writes, has revealed that the scholarship students perform better in learning than the fee-paying students. Their educational performance was measured with the indicators: frequency of library visit, frequency of reading course-related articles, duration of time spent by students on self-study (independent variables) and the marks they obtained (dependent variable) in the first and the second year of nursing courses.

Finally, the editorial team would like to express gratitude to the CTEVT management and staff for their necessary coordination and encouragement, which helped bring this publication to fruition. We also extend our thanks to the authors for their prompt cooperation. We look forward to similar cooperation and coordination in the future to enhance the TVET regime in Nepal through academic discourse. As always, feedback on the publication is welcome, and the team believes it will help us improve in the future.

It is important to note that the opinions and ideas expressed in these articles are solely those of the respective writers and do not reflect the views of CTEVT, nor are the institutional representations.

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Article

Approaching Apprenticeship in Nepal: Lessons from Dual-VET of Germany

Prakash Kumar Paudel^{*a} and Christiane Eberhardt^b

^aKathmandu University School of Education

^bFederal Institute for Vocational Education and Training (BIBB)

Abstract

Apprenticeship training is geared towards meeting the demands of the labor market which also ensures self-esteem, employability and vocational career development for the individuals. Against this background, apprenticeship is seen as a successful model for grooming the labor force and reducing youth unemployment. In this paper, we map the current state-of-the-art of apprenticeship in Nepal against the dual system of VET in Germany. The central question in our reflection is how common ownership can be established through responsibility sharing in countries, where other governance principles apply and the governance models also differ from the German model. Hence, in the first step, we focus on the origins of vocational training in both countries. We show that the development of apprenticeship has been driven by social, political and industrial needs, thereby getting deeply rooted in society. We show that despite many challenges, dual training in Germany is an important educational pathway for young people to access the labor market and a backbone of the economy there. This is different in Nepal, where despite the governance structures that have been created in the meantime, apprenticeship training is struggling for recognition among the leaders and actors in the economy. We end up adopting the "six central pillars for successful quality apprenticeships" (i.e. meaningful social dialogue, robust regulatory framework, clear roles and responsibilities, equitable funding, strong labor market and inclusiveness) developed by the ILO (2017). We reflect on them with reference to the Nepali case and in the shadow of the German experiences. In our conclusion, we propose to add "consideration of the country context" as the seventh important pillar for qualitative apprenticeship to ensure sustainable development – free of external funding and support.

Keywords: informal apprenticeship, apprenticeship in the dual VET system, Nepal, Germany

Introduction

Apprenticeship generally combines learning in a vocational school or at a training provider with the acquisition of specific vocational skills at the workplace. The International Labor Organization (ILO) defines in its

vocational training recommendation that apprenticeship is to be carried out in a *systematic learning process in a specific occupation with quality and formal arrangement* (ILO, 1962). This definition

^{*}Corresponding author. Email: prakashpaudel@kusoed.edu.np

of apprenticeship points to a legal provision that obliges all stakeholders to commit to a standardised learning process based on a curriculum or training program that is accepted and implemented in a structured and mandatory manner in both learning environments.

Until nowadays and in contrast to the above-mentioned requirement, apprenticeship is also a common phenomenon in the informal economy. In many countries around the world where the informal sector dominates, skills pass from one generation to the next by “informal apprenticeship”. This “informal apprenticeship” is characterized by its unstructured framework in which learning often takes place unsystematically and independently of official (recognised) plans or VET-standards and where the focus is on the needs of the training company or the skills of the person providing the training. In addition to a high social value for the community, "informal education" also brings constraints, such as insecure working conditions, low- or no-income prospects, little or no social protection, etc. However, promotion of informal apprenticeship is considered adding value, as it is a cost-effective way to invest compared to costly formal arrangements for enhancing employability of the youth (Steedman, 2012). But, the evidence also shows that formal apprenticeship has provided strong support in lowering the youth unemployment rate among good economic performing countries (Valiente & Scandurra, 2017).

Formal apprenticeship does not only seek to arrange learning opportunities in both schools and working places but also to develop a partnership among the social institutions

with common ownership of the system and with shared responsibilities. ILO (2017, p. 4) identifies six quality indicators; meaningful social dialogue, a robust regularity framework, clear roles and responsibilities, equitable funding arrangements, strong labor market relevance, and inclusiveness for a standard apprenticeship system. Although these indicators/quality criteria can be applied to all apprenticeship models, there is a great deal of variation between the countries. Against this background, we examine VET in Nepal and Germany, in particular how apprenticeship has developed, its current scope, outreach and governance. Our aim here is not to compare apples and oranges, but to take the German experiences with the dual training model as occasions and impulses for discussing apprenticeship in Nepal, which has only recently embarked on this path. Finally, we reflect on Nepali Technical and Vocational Education using the ILO framework (2017) in the shadow of the German experience.

The Origins of Vocational Training in Nepal and Germany

Wherever work is done, "learning in the process of work" takes place - in Germany, Nepal and elsewhere. This means that "work-based learning" takes place everywhere - but differently everywhere (Georg, 2013). The relationship between education and employment always involves historically evolved institutional structures. The corresponding institutions may have developed differently in the individual nations, but they certainly have common roots that go back to the Middle Ages. This is equally true for Nepal and Germany.

Nepal

A structured and organized family-based apprenticeship system that maintained occupational skills and craftsmanship from generation to generation for centuries is traced back in the history of Nepal. The long-standing tradition of education was built on the understanding that the father taught his sons to follow in his footsteps to pursue careers and earn a living, and the mother taught her daughters to follow her in learning household chores (Shrestha, 1991). These learning practices were informal and continued within the family and the clan for generations. However, these family-based occupations were rooted in customary laws called *Sthiti*. The *Sthiti* was legal order ascribed to the particular caste in which normally, social responsibility was attributed either guided by religious text or influence of political situation (Sharma, 2004). King Jayasthiti Malla in the 14th century hierarchically arranged four varnas and 64 castes with their prescribed job description. The system persisted for a long time although Muluki Ain later discouraged the hierarchy. Hence, occupational skills continued to work with caste systems and still, it could be found as an indicator for interpreting one's social status in many Nepali societies.

The modern education system failed to integrate informal family-based apprenticeship and prioritized only school education for younger children (Bureau of Publication College of Education [BPCE], 1956). Consequently, school-based general education became mainstream in educating young people in Nepal. The standing of traditional skills neither could improve social status compared to modern education nor could make its space in the curriculum

of modern education. Formally, modern vocational education started during the 1960s in some selective multi-purpose schools for early productive education along with general education. Some modern institutions, such as the Butwal Training Institution (BTI) and the Mechanical Training Centre (MTC) started focusing on technical and vocational education. These institutions were established with different school arrangements than general education. These institutions also began a formal apprenticeships, internships and On-the-Job Training (OJT) programs in Nepal.

Later, in the 1989, the Council for Technical Education and Vocational Training (CTEVT) was established to manage the entire TVET system in Nepal. The CTEVT introduced both formal and non-formal TVET programs in its technical institutes. However, it expanded access to TVET across the country providing affiliation to the community and private education providers. Internships and OJT were the workplace learning approaches. However, after 2018, CTEVT introduced a dual VET program in a few selected schools.

Germany

Apprenticeship has been known in Europe since the 13th century. In this time, the craftsmen themselves organized into various professional associations called guilds and supervised the training of apprentices ensuring that traditions and standards of the craft were observed. The guild system was hierarchically characterized into apprentice, journeyman, and master craftsman. It was also gendered as only male apprentices were accepted into the guild system. The guilds had the autonomy to define the length

of the apprenticeship, curriculum, wage, and working conditions of the apprentice. The apprentices lived in their master's households, and their parents paid a cost for food and lodging to the master. The training rested with the individual master craftsman who took responsibility for both the theoretical and practical training of the apprentice. After a specialized examination administered by the guild, the apprentice was "discharged", thereby making him a journeyman. After years of experience, the journeyman could submit a piece of his best work to the appropriate guild for assessment and approval. If the piece of work was accepted, the journeyman would become a master craftsman. This gave a new master craftsman the right to set up his workshop and the authority to train apprentices himself (Poulsen & Eberhardt, 2016, p.7). One can say that medieval guild training was about learning and working but at the same time, it was about upbringing, social control and socialization into a particular role as a citizen. Over the centuries, the function of VET turned from that social control to "facilitating self-development".

The nowadays-dual system took further shape at the beginning of the 19th century when the large-scale industry itself worked strongly on the development of vocational education and training. The German industry rejected the Taylorist-inspired fragmentation of the training process and opted for a new type of role model, the "skilled worker", regulated by a system of generally accepted vocational certificates, the basis of which we know nowadays as professional standards. Training at two learning venues was implemented, which in those times were the training workshop and factory school, with

standardized courses and teaching materials underpinned by job descriptions, training schedules and examination requirements for every "training occupation" (regulatory instruments) (Greinert, 2005, p. 97). A model of how on-the-job training in workshops and schools should look alike was already adapted for the industry in the nineteenth century. Those principles were determined for the first time in Germany in the "Declaration on the Regulation of the Apprenticeship System" which was adopted at the 10th Congress of the German Unions in Nuremberg in 1919. It can be considered the first draft of a vocational education and training scheme. It already contained essential elements of the Vocational Training Act, which entered into force 50 years later on 1 September 1969 after lengthy debates (amended in 2005 and again in 2020). It describes the roles, functions and responsibilities of all participating stakeholders and secures common ownership of the system (Poulsen/Eberhardt 2016). With the Act on VET, the world of work and the world of education are legally connected. The Act on VET does not stand alone. It is accompanied by the Youth Employment Protection Act and the respective collective bargaining agreements of the sector to avoid exploitation. Industrialization had a strong impact on the development of modern occupations and vocations that represent until nowadays a specific structural pattern in German industrial work. The emerging strong influence of trade unions in the large-scale industry was the starting point for social partnership and collective bargaining agreements, which also involved VET heavily by a system of generally accepted vocational certificates, later on, professional standards.

For both Nepal and Germany, it is evident that the national characteristics of the education and vocational training systems are always embedded in a country-specific historical, cultural and institutional context. The same applies to the constellations of the labor market and employment. Every society is characterised by a specific form of educational organisation, labor market structures and company work organisation. There are stable interactions between these dimensions. These interactions also explain why social institutions have a high degree of inertia and are largely resistant to change.

Outreach, Scope and Governance of Apprenticeship Training

Although the term governance has a lot of different meanings (Stoker 1998:17), there is broad agreement that governance refers to the development of forms of government in which the boundaries between and within the public and private sectors are blurred. When we approach issues of governance in VET, we look for mechanisms that include regulation, social action coordination and steering. Accordingly, our notion of governance derives from a definition of governance as “[...] the totality of all coexisting forms of collective regulation of social issues: from institutionalised self-regulation by civil society, through the state and private actors, to sovereign action by state actors” (Mayntz, 2003, p. 72). In this understanding of governance, the boundaries between and within the public and private sectors become blurred. The logic and mechanisms of action are not prescribed and sanctioned by any state authority. Instead, the governance structure is the result of the interaction of a multitude of mutually accepting and cooperating actors.

Governance in VET is implemented within three logics of action: state-led, market-based or corporatist. Systems that rely on a central role of the state typically have a very high proportion of school-based VET under public responsibility – the governance is thus state-led (Greinert, 2005). The governance of systems where the vocational qualification is essentially organised in-company or on-the-job after some years of schooling takes place beyond the sphere of public influence under market conditions. And there are systems that are to be assigned to the type of negotiation. For the policy field of VET, the context of corporatism is particularly important. Which governance system is applied depends largely on the historical development and tradition of VET systems.

We describe corporatist governance using the example of the German dual VET system below. Nepal represents a country in transition: it is largely subject to state control and at the same time, has created structures in which non-state actors are to be involved in the design of vocational education and training.

The Nepali Path to Vocational Training

According to the Industrial Trainee Training Act, 2039, (1982), vocational education in contemporary Nepal emerged with the aim of training school dropouts and preparing them as lower- and middle-level workers. However, the 2018 Guidelines for Apprenticeship Training (CTEVT, 2018) describe apprenticeship training as a form of learning where learners are placed in a real work environment after acquiring theoretical knowledge in school.

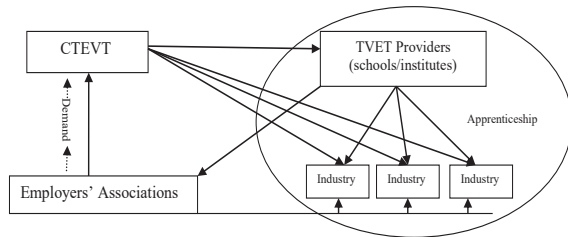
All educational institutions in Nepal are managed by the Ministry of Education, Science and Technology (MoEST). The ministry also promotes technical and vocational education in some community schools. TVET, mainly, is under the supervision of CTEVT. It is also a larger umbrella organisation for TVET, comprising over 1,100 technical schools, including constituent, partnership models and affiliated schools (CTEVT, 2019). Ministries other than MOEST are also involved in curriculum development and program implementation. Nevertheless, apprenticeship programs are implemented only in the formal program under CTEVT in Nepal. As the apex organisation for vocational education and training, CTEVT conducts both formal programs (diploma and pre-diploma programs) and non-formal short-term training programs across the country. Forty-eight curricula have been developed for the diploma level and 31 for the pre-diploma level. In addition, more than 300 standards for vocational qualifications have been developed. Of these, seven curricula (lasting 24 months) were developed for dual VET apprenticeship. These are mechanical engineering, electrical engineering, automotive engineering, civil engineering, hotel management, information technology and early childhood development, which are implemented in about 30 technical schools with an intake capacity of about 1,000 students. This is a small number compared to other courses which have a total intake capacity of over 80,000 students (CTEVT, 2020). This also shows that students are not enrolled according to the capacity of the schools, and the apprenticeship program is no exception.

Dual VET apprenticeship was introduced in 2018 with the aim of preparing the youths to meet the demand of the labor market (CTEVT, 2018). The Guideline for apprenticeship program 2018, the policy made to explain article 6.11, of CTEVT Act 1989 a provision for apprenticeship training. Apprenticeship programs have a duration of 24 months. Upon completion of the program, students receive a certificate equivalent to the Secondary Education Examination (SEE) from CTVET. There are formal entry requirements for apprenticeship and students must complete full-time compulsory education. In the beginning, the apprentices attend school for the first three months. In the fourth to twenty-third month, apprentices attend in-company training. During this period, they spend five days per week at the company and one day at school. The last month (24th month) is spent at school and the final examination is taken at school.

The CTEVT is the main body for implementing and regulating apprenticeship training programs. It receives a demand from national employers, but according to the directive, demand from the foreign labor market is also a source for apprenticeship training. Once the demand for a program is identified (both through research and enquiries), CTEVT initiates the development of a curriculum for the specific program. The process of designing the program involves employers from the federations on an ongoing basis. Once the curriculum is approved by the board formed under the CTEVT Act 1989, the schools are responsible for its implementation. Although the respective school is responsible for implementing the training and coordinating with employers, the CTEVT conducts the entrance examination for enrolment and the final examination for

certification. The CTEVT regularly monitors the programs carried out and the schools and employers are also expected to support this process. The modalities of apprenticeship training are shown in Figure 1.

Figure 1
Modality of Apprenticeship in Nepal



Source: Guidelines for apprenticeship program (CTEVT, 2018)

Schools entrusted with the implementation of the apprenticeship program formally sign a tripartite contract (employer, school and apprentices or their parents) with employers. Prior to this, it has been verified that the employers meet a standard for workplace learning and are therefore able to train. Trainers/instructors are nominated by both parties, school and industry, to guide and support the apprentices with their learning employers select an instructor (senior craft man) to facilitate and a roving instructor from among the senior employees to coordinate and monitor the program in the industry. The trainers in the industries and companies keep a record of the apprentices' performance and finally send the evaluation record to the respective schools. In the last month of the training program, the apprentices learn in the schools and take the final examination, which is conducted by CTEVT. During the in-company training, the apprentices receive at least 25% of the basic salary as pocket money, which is managed by the employer.

Apprenticeship within Dual-VET System in Germany

The dual system (in this paper the term is synonymously used with the term “apprenticeship”) is at the core of vocational education and training in Germany. Two legal documents - the Vocational Training Act and the Crafts and Trades Regulation Code (Handwerksordnung, HwO) - govern initial vocational education and training under the dual system in Germany. Under the terms of the Vocational Training Act (Berufsbildungsgesetz BBiG), the concept of “vocational education and training” comprises the areas of vocational training preparation, initial vocational training, advanced/further vocational training, and vocational retraining.

Vocational Training within the dual system in terms of apprenticeship is currently provided in 323 vocational profiles (occupations), described as so-called “recognised training occupations”, and laid down in vocational training directives (training programs). Training takes place predominantly three to four days a week in the company and is accompanied by one to two days a week at a part-time vocational school. The curriculum of the vocational school contains about 2/3 job-related and 1/3 general education content. For both learning venues (company and VET school) there are independent - but coordinated - regulations for both places of learning. They are implemented by company-based and school-based training curricula that are interlinked.

Most dual training programs last three to a maximum of three and a half years. There are no formal entry requirements - only the fulfilment of compulsory full-

time compulsory education. Access to VET is (formally and by law) not depending on the young applicant's school-leaving certificate. Companies decide independently whom they train and employ while it is the responsibility of young people to apply for an apprenticeship-training place with a company. In final examinations, apprentices must show that they have acquired "the necessary skills, the necessary practical and theoretical knowledge" (from their companies) and that they have mastered "the course material, as taught in vocational schools, that is central to the vocational training in question" (BMBF, 2003).

The companies sign contracts with apprentices under private law and undertake the costs of the training. They pay apprentices allowance in accordance with the collective bargaining agreement in the sector concerned. Training takes place in the workplace in line with the binding provisions of vocational training directives, which ensures a national standard. The training is monitored and supervised by competent bodies, mainly the chambers (of industry and commerce, crafts, agriculture, doctors, and lawyers) and by competent public service bodies or by the purview of the churches.

The dual system, despite many problems, remains the largest education provider at the upper secondary level in Germany. About one-third of all employees have passed dual training. They acquired vocational competence mainly in companies and in part-time vocational schools during their educational pathway. At the end of 2019, approximately 1.33 million persons (mostly young people) nationwide had the status of apprentice in the company. Slightly more

than half of an age cohort (54.4 per cent) started with apprenticeship training in one of the 323 occupations in 2019 (Federal Institute for Vocational Education and Training [FIVET], 2021).

The final examination of apprentices is administered by the authorities, the competent bodies, responsible for vocational training. The competent bodies include regional and sectoral organisations of industry and commerce, such as; chambers of industry and commerce, or handicrafts, or liberal professions that perform governmental functions in the domain of vocational training. However, the competent bodies can also be public authorities. The board of examiners are formed of representatives of industry, labor, and teachers from vocational schools. The final examination includes both a practical and a written component. Successful candidates are awarded an examination certificate. Concurrently, the vocational school issues a leaving certificate if the trainee has performed at least adequately in all subjects. The successful candidates also become eligible to attain the Fachhochschulreife, technical college entrance (KMK, 2019).

An apprentice successfully completing the training is immediately entitled to do skilled work. The formal qualifications on successful completion of initial training undergone in the dual system correspond mainly to ISCED level 3 (EQF level 3 and 4) and provide recognition as a skilled worker in the industry (Facharbeiter / Facharbeiterin der Industrie), an employee in business and administration (Fachangestellter / Fachangestellte in Wirtschaft und Verwaltung), and Journeyman/Craftsman (Geselle / Gesselin im Handwerk).

Even though the number of companies offering training in Germany over the recent years was decreasing, learning within the dual system is still the major VET strand in Germany. In 2019, 427,000 companies (20%) participated in the system by offering apprenticeship places and concluding corresponding contracts with applicants. Increasingly, however, matching problems are arising in the labor market. In 2019, total of 57,700 apprenticeship places in companies remained unfilled because no suitable applicants could be found. In contrast, 78,600 young people remained "unsupplied" on the applicant side and could not find an apprenticeship place in a company (Federal Institute for Vocational Training, 2021).

Companies invest heavily in training their next generation of skilled workers. According to the results of a representative BIBB survey on the costs and benefits the investment pays off, however, particularly, when the apprentice is taken on, as recruitment costs are saved, dependency on the external labor market is reduced. Similarly, it smites possible downtime costs because the personnel bottlenecks are avoided. Apprentices not only generate costs but also contribute to the production of goods and services through their work (Federal Institute for Vocational Education and Training, 2009).

Governance of VET

In Germany, the fundamentals for the successful interweaving of educational and labor market-related issues and interests are anchored in three key principles of apprenticeship in dual VET: "dualities, "consensus" and "occupation" (see Greinert 2005, Kutscha 2002). In their interaction,

these principles ensure the common ownership of all actors and stakeholders with shared responsibilities for the governance of the VET system and the provision of apprenticeship training.

The core feature of the dual system in Germany is rooted in the active involvement of various actors. The guiding and coordinating Federal Ministry of Education and Research (BMBF) is at the federal level. Other federal ministries issue ordinances and coordinate with the BMBF (their provisions are subject to the approval of the BMBF). Representatives of employers, the unions, the Länder, and the Federal Government work together on the board of the Federal Institute for Vocational Training (BIBB) on an equal basis.

Ministries of cultural affairs at the Länder level are responsible for general and vocational schools. The Länder governments form vocational training committees made up of representatives of employers, employees and the relevant Länder governments. These Länder committees advise Länder governments on vocational training-related issues. They are responsible especially for promoting cooperation between in-school and company-based vocational training.

The Länder established the Standing Conference of the Ministers of Education and Cultural Affairs (KMK, Ständige Konferenz der Kultusminister der Länder) to establish cooperation in education and training. The KMK bridges the Länders and the Federal Governments. The Federal Government regulates training in companies while the Länders are in charge of vocational training in schools.

The autonomous organizations, especially, the chambers of industry and commerce and crafts chambers important roles at the regional level. These organizations supervise and monitor in- companies training, review the suitability of companies, and assess the aptitude of instructors within their districts. They are also responsible for registering apprenticeship contracts and establishing examination boards for intermediate and final examinations. Under the Vocational Training Act and the Crafts Code, they are independent to issue individual regulations in their regions. The Länder ministers of economics; however, are also responsible for supervising regional competent bodies for company-based vocational training.

Several legislative regulations, such as the Vocational Training Act and the Law on the Constitution of Enterprises, have provisions for the participation of trade unions in vocational training. At Länder level, the unions have equal representation on the Länder Committees for vocational training together with the representatives of the chambers and the public purse. Furthermore, at the federal level, they also have equal representation on the Main Board of the Federal Institute for Vocational Training.

In the dual vet system, shared responsibilities among the actors lead to the following statutory framework conditions and clarifying what is meant by the term dualities:

Table 1

Dualities in the German dual VET system

| | |
|-------------------------------------|--|
| Duality1: Basic laws | In-company training is governed by the Vocational training Act whereas respective Lands are in charge of part-time vocational schooling. |
| Duality2: Learning Venues | Vocational Training takes place in a company/firm under private law and part-time vocational schools run under public law |
| Duality3: legislative competence | Vocational Training is regulated by the Federal government (in-company training) and the Government of the respective Land (part-time vocational schools) |
| Duality4: judicial regulation | The enterprise and the trainee make a contract based on private law for in-company vocational training while part-time vocational schooling is based on compulsory attendance (Berufsschulpflicht) |
| Duality5: Content | In-company vocational training content is stipulated in the training regulations while it is laid down in the curriculum framework (Rahmenlehrplan) in part-time vocational school |
| Duality6: Supervision | Company-based vocational training is supervised by competent bodies and part-time vocational schools are by education authorities. |
| Duality7: Financing | The companies pay for company-based vocational training, and the governments of the respective Länder pay for the part-time vocational schools |

Source: Authors' illustration based on Vocational Training Act and other public laws

There are some more dualities such as the status of the learner (“apprentice” in the company/student in school), the professional (trainers in companies/teachers in schools), the learning (the work process in the company / theory-based in school), the examination procedures (final examination at the competent body/school certificate) and the organisation of training (2/3 of the training in the company / 1/3 in school).

This shows that the designation “dual” does not however refer just to the learning at two learning venues but also (and most importantly) to the questions of governance and the associated responsibilities to the different stakeholders. “Dualities” in this respect show the well-balanced interaction between the federation and the Länder, employer organisations, trade unions (social partners) and intermediary organisations and thus between all organisations and institutions involved in VET. “Dualities” are also apparent in respect of the legislative foundations, financing issues, the design of the content, and the oversight of initial vocational education and training.

Discussion

In the preceding sections, we have tried to mirror the Nepali way to apprenticeship with the German understanding of training in the dual VET system. We have shown that the term "apprenticeship" stands for a company-based form of training in which the needs of the labor market are already considered in the training programs (curricula). According to this understanding, "apprenticeship" means that the training is practice-oriented and provided preferably at company and school.

The evidence shows that there was an apprenticeship system in both geographical regions although they were unique in their features. Germany came through a long history of the Guild system and ventured into the modern dual VET with the emergence of the industrial revolution. In such a context, industrial expansion created a huge demand for skilled human resources and dual VET emerged as a solution to fulfil the gap. The modern VET bases on the principle of dualities of the traditional guild system. Similarly, there was a system of family-based apprenticeship in Nepal for many generations to fulfil the labor demand in the labor market. The modern TVET system instead did not assimilate the family-based apprenticeship. Unlike Germany, TVET in Nepal began following establishment of democratic system. Hence, it grew with political change which opened an avenue for national development and many skilled people were required to carry out development activities in various sectors. However, the preparation of such skilled human remains largely supply driven.

Through our recourse to the Nepali and German historical development of vocational training, we have also shown that the way in which qualifications are catered on and awarded in our countries which has been handed down over many decades. Education and vocational training express our access to society, culture and economy – against this vocational education and training (systems) and qualifications as their products are cultural projections (Georg 2005, p. 183). However, systems, and especially vocational training systems, that work successfully in one country can remain foreign bodies in another if they cannot be embedded in the

national, cultural and economic framework. Our comparison of Germany and Nepal showed that the orientation of Nepali TVET to the German dual system is only useful to a limited extent. However, this does not mean that Germany's example cannot be a reference - especially with regard to key issues that are currently on the political agenda in Nepal as well.

On the basis of the above-presented mapping of scope, outreach, and current governance system of apprenticeship, we further approach apprenticeship in Nepal with the ILO (2017) framework of six key dimensions i.e. meaningful social dialogue, a robust regularity framework, clear roles and responsibilities, equitable funding arrangements, strong labor market relevance, and inclusiveness for a standard apprenticeship system. Doing so, we also shed light on German experiences of the dual VET system.

Meaningful Social Dialogue

Increasing the engagement of employers in TVET system is a basic requirement. This will both increase the quality of the program, as it gains social ownership. Apprenticeship within the dual system, however well-balanced and historically developed it may be, is enormously susceptible to crises and economic cycles due to its close connection to the labor market. The consolidation of the positive image of VET is - in addition to numerous other problems which have not been mentioned here - also an issue in Germany. This can be a good vintage for Nepal, as it is just embarking on the journey of the apprenticeship system.

TVET system in Nepal is regulated by its implementing body CTEVT though

employers witness most of the processes. They participate in the curriculum making process and also train apprentices in their industries. However, the study has shown employers' participation is not meaningful (Bajracharya & Paudel, 2021). Linking these key actors in the TVET system is inevitable to sustain. However, establishing collaboration between these social actors is equally challenging because each partner operates in a different frame of reference (Flynn, Pillay, & Watters, 2015). So, for this, boosting the image of VET in society, among employers and among young people according to country context counts equally. This requires an intensive dialogue and creates a win-win situation with power sharing among the actors (Caves et.al., 2019) so that they would be obliged to bear the responsibilities.

Clear Roles and Responsibilities

The principle of duality has been a major characteristic of apprenticeship (Wolter & Ryan, 2011). However, comparing two countries, the principle of duality is executed differently. In the context of Germany, it is the social partners (employers and trade unions) who decide the need of the training while in Nepal TVET providers in consultation with employers provide the training. Similarly, there are stipulated roles between the federal and state government in Germany. However, this was seen as absence in the context of Nepal which is waiting for governing TVET act in the federal context since 2015 when the new constitution came to restructure the centralized governance system with new constitution in place.

Actors of TVET, mostly the TVET providers and employers, interface in the various stages of TVET system. According to

Rageth and Renold (2017), their interaction can be observed in three stages: during curriculum designing where these actors decide on qualification standards, exams etc., implementation of the prepared curriculum together, and finally the gathering of the information for further move. The guideline prepared for implementing apprenticeship in Nepal defines the roles and responsibilities in articles number 10 and 11. However, the core issue is how these actors are independently executing their roles and responsibilities. In the context of Nepal, Lamichhane (2021) saw the gap in partnership with articulated roles that could have been a catalyst for increasing ownership and thus quality output of TVET.

A Robust Regularity Framework

The modern apprenticeship system is often seen as regulated by law. The experience of German shows it is a strong institution that makes the apprenticeship system a standard. In the context of Nepal, laws, policies, and plans are yet to be harmonized to calibre the implemented program (Caves & Renold, 2018). Currently introduced dual VET apprenticeship is governed by CTEVT Act, 1989 which envisioned the implementation of apprenticeship program long before. Despite having CTEVT as an apex body for the TVET, other ministries are also running the program in parallel. This has not only created confusion but also invited conflict among the actors. It also lacks a strong coordinated regulatory system in the absence of governing TVET act in the federal context. In the case of apprenticeship, it has been governed by the federal but there is a question of what would be the role of provinces and the local government which have a mandate by the constitution 2015 to

manage secondary-level education. Thus, it seems reformed TVET structure with guiding law can be a strong basis for making apprenticeships sustainable in Nepal.

Strong Labor Market Relevance

The skills gap has remained a common issue in many countries which is strongly considered to result in a poor employment situation (Jayaram & Engmann, 2017). Nepal is not an exception: an issue of a gap between the demand of the market and the supply of the programs is persistent (Sharma, 2013). The objectives of apprenticeship in Nepal aim at enhancing occupational skills and getting prepared basic and middle-level competent human resources according to the demand of the labor market (CTEVT, 2018). Apprenticeship can be instrumental in skilling the youth, as the Central Bureau of Statistics (2019) reveals about 80 % of people who were employed had less than secondary-level qualifications. In this situation, the employers have to invest on their own to groom the employee for their company, as the report of the Asian Development Bank (2015) also shows about 90% of youths who were in employment claimed to learn their occupational skills during their job. The foreign labor market has been also a strong venue for Nepali youth in the last decade. Every day, over 1,000 youths fly abroad for a job in different destinations, such as Gulf and Malaysia. A report by the Ministry of Labor, Employment and Social Security [MoLESS], (2020) about 60% of them go abroad without receiving specific occupational skills which makes them earn comparatively low wages.

Having a least developed economic country, the labor market absorption capacity also seems to be a roadblock. German experience

shows a demand for a huge labor force with the industrial revolution in the late 19th century. However, in Nepal, informal sector still dominates engaging the youth for their employment (62%). A recent report shows among the employed youth, only 15 percent was shared by the manufacturing industry followed by 14 percent in construction (CBS, 2019). This shows apprenticeship in Nepal not only need to enhance the employment skills but also prepare them as an entrepreneur to generate avenues for new employment.

Equitable Funding Arrangements

There are various practices for financing TVET across the world which mainly depend on how resources are mobilized in the concerned national contexts. However, in the context of TVET along with involvement of employers and coordination among the program implementing stakeholders, a sustainable fund source and fund mechanism is equally important (Johanson, 2009). In Nepal, TVET governance is fragmented as many ministries run TVET programs simultaneously. In this context, one of the major sources of financing is the government's regular fiscal budget. However, the budget allocated to TVET is negligible (Parajuli et. al., 2020). The community also invests in TVET in Nepal. This is funded in partnership model where government and community bear the cost for TVET. According to CTEVT report (2020) 572 schools are running TVET program in community across the country. These schools receive a partial grant from CTEVT and manage the remaining cost on their own. Similarly, international aid from developing partners has been also a strong source for it in Nepal.

Apprenticeship is also funded by both the government and employers. The government bears the cost that is required for institutional learning. The employers provide incentives to the trainee students as per their mutual bargaining although the guideline for apprenticeship recommends providing at least 25% of the basic salary. However, it seems important to have a strong regulatory mechanism of funding to ensure that a trainee student gets a respectful incentive for their contribution to the employers.

Inclusiveness for a Standard Apprenticeship System

Inclusiveness is also considered one of the strong pillars of quality apprenticeship (ILO, 2017). The TVET system in Nepal also shows implementing programs considering the issue of inclusion. Apprenticeship is a regular program of the CTEVT. As a rule, it ensures a certain number of enrolments for youth from the underprivileged community. Nevertheless, some occupations are traditionally taken, specifically for males while others are for females. For example, construction is a male job while nursing is female. In this regard, apprenticeship in Nepal has equal challenges to mitigate this social construct.

Country Context as the Next Pillar

The modern economy can not work with unskilled workers in a country like Nepal. The core question in this context is: "How can TVET successfully link the world of work with the world of education?" For this, we argue that developing TVET considering the national context is more sustainable and successful. German experience shows

that dual vet does not stand alone. On the contrary, it is embedded within the country's socio-economic context. The modern VET system is the continuation of the traditional guild system which was a strong social institution that continued for centuries. The German VET system can be suitable for Germany in many respects. But that does not mean that it is the same for Nepal, as Nepal has a different socio-economic context. In this regard, a national context also needs to be considered as an important pillar for developing a successful apprenticeship system. Nepal can benefit from the German experience but it is equally important how it is built in the country's context.

Conclusion

Apprenticeship regains attention in Nepal despite the modern TVET system disembarked traditional family-based apprenticeship system. Unlike Germany which developed a modern dual VET evolving over centuries, family-based apprenticeship was a roadblock for modern education. Nepal posits a distinct labor market and social context in which TVET needs to be a contributor and increase its social value. Apprenticeship can be a vehicle for recognizing largely occupying informal sectors, as TVET graduates also can be an innovator. Similarly, it can be a role model for strengthening public-private partnerships for national development, as employers have already started providing incentives to trainee students which were rare in the past.

In this context, what could be stepped on in Nepal's way to more practice-oriented training and more labor market-relevant apprenticeship? To this end, we put forward the following considerations for discussion:

- a) Introducing entrepreneurial learning at TVET schools. Entrepreneurial learning should prepare young people for the labor market or possible self-employment at an early stage. To make this possible – among others - explorations could take place in companies, or company representatives could come to the schools and report on their work, their experiences and their future needs;
- b) Enabling school-business cooperation by networks bringing together representatives of TVET schools and business. This will attract new employers to engage and build a social partnership;
- c) Establishment of equipped production houses or workshops in the school to increase the practical orientation of the students.

Well-equipped workshops at vocational schools could also be a lure for small enterprises that may not be so well-equipped. Companies and apprentices at schools could work together on more complex assignments and tasks. In addition, the schools could offer their products or services on the market (principle of production school) and thus raise funds for the maintenance of the workshops. We thus argue for how win-win situations can be created in the medium and long term and how development opportunities for the individual can be linked to development opportunities for a larger informal sector or a company.

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Article

Researching Informal Skills Learners: Considering Work Interruption And Vulnerabilities

Durga Prasad Baral^{*a}

^aKathmandu University School of Education

Abstract

Informal skills learners are the workers who learn occupational skills during their work in an informal setting. Little research has been done on their learning environment and processes in a context similar to Nepal and many other developing countries. Such research deficit is more pronounced in informal skills learning research. In this paper, I address this gap. Based on two concepts - work interruptions and vulnerability of novice informal skills learners - I discuss methodological and ethical dilemmas while researching these people. Drawing from my PhD research carried out in four occupational sectors - pottery, metalcrafts, fast food and two-wheeler mechanics in Nepal (in Kathmandu valley), I first analyse the general features of informal skills learners' vulnerability which might further increase while spending time with the researchers. The ethical dilemmas researchers might face while researching vulnerable skills learners are about minimizing work interruption and avoiding harm to them. At the end, I propose specific ways of dealing with informal skills learners while conducting fieldwork. The study expects to increase the researchers' awareness while dealing with vulnerable workers and learners, and provides a track for further research in the area.

Keywords: informal skills learners, workplace learning, work interruptions, ethical dilemma, vulnerability, novices and experts

Introduction

This paper explores the ethical dilemma that a researcher studying informal skills learners can face during the fieldwork. A researcher might face dilemmas caused by work interruption in informal skills learners during the interview and while observing the work setting. Informal skills learners are more vulnerable (Baral, 2020a; Bhorat et al., 2016), and their vulnerability can increase by the probable work interruption during the researcher's interaction with them. Concerning this research, the originally

planned formal interview sessions did not work, so I had to rely on the informal conversation in the form of *kurakani* (Dhakal, 2021) during the observation of the work, not hindering their workflow.

Informal skills learners are the workers without or with minimum educational qualifications employed at informal jobs and without basic formal agreements. In the countries where the informal economic sector is dominant, the prevalence of such workers

^{*}Corresponding author. Email: baraldurga@kusoed.edu.np ORCID <https://orcid.org/0000-0002-6510-8106>

is higher. These informal skills learners, particularly the novices, are vulnerable people (Baral, 2020a; Bhorat et al., 2016; Organization for Economic Cooperation and Development [OECD] & International Labour Organization [ILO], 2019; Sanders et al., 2014) due to different socio-cultural reasons. The probable work interruptions caused by the research activities can add to the vulnerability of informal skills learners, particularly the novice ones.

Informal skills learning is a less researched area in the overall workplace learning field. However, for some decades, the curiosity of the researchers in the field of technical and vocational education and training (TVET) towards informal workplace learning has been proliferating (Le Clus, 2011). As informal skills learners have unique features, such as informal work contracts and the possibility of losing a job at any time, their peculiar issues demand additional precautions in the research process (Coetzer et al., 2017). Due to such distinctive features, informal skills learners can hesitate to participate in the research processes, which might affect their workflow. A work interruption is a situation that a worker willingly or unwillingly faces disturbance in the workflow. This situation can put the researcher in a dilemma about how to manage fieldwork without disturbing them. Such a dilemma can create further predicament in the researcher on whether, and how to proceed with. In addition, researchers also face challenges of minimizing harm to those people during the research process. In this context, I aim to discuss how to tackle the work interruption dilemma while researching informal skills learners. To explore this question, I begin by analyzing the general characteristics of informal skills learners

that create their vulnerability associated with work interruptions.

Most informal skills learners face multiple challenges and experience vulnerabilities during the initial phase of their engagement with the enterprise. This is because most of them are unskilled workers. It means comparatively new entrants (informal skills learners) are more vulnerable than the experienced or experts. These terminologies (of novice and expert) are not very specific and clear to differentiate. Nevertheless, skills level, income, confidence in work, social identity, and maturity are some elements separating novices and experts. Although there are multiple studies available in the field of TVET research, study into this particular phenomenon of added vulnerabilities caused by work interruptions is in dearth (Bremer, 2008).

Before presenting the field findings, first, I provide some conceptual discussion on some related terminologies. After introducing the topic, it concentrates on understanding the vulnerabilities of novice workers with informal employment. I discuss the prevailing practices of differentiating novices and experts in the beginning. Then, in the following section, I describe the added vulnerabilities with informal skills learners due to work interruptions caused by researcher engagement with them. It is followed by the presentation of the features of informal skills learners based on the information received from the research participants and their vulnerabilities created by these features. After that, I discuss the researcher's dilemma while studying informal skills learners. I also debate the ways for tackling the work interruption dilemma.

Differentiating Novices and Experts

The work experience and the status in the workplace distinguish novice and expert workers. The workers who have less experience and are in the preliminary peripheral space in the skills development path are considered novices, whereas those who have already obtained a certain level of skills and expertise and enjoy higher status in the work community are the experts (Lave & Wenger, 1991).

Experts and skilled workers understand their occupational field better and can apply the skills and competencies learned effectively in their work (Kolodner, 1983). However, Burdenson (2003) argues that considering an expert based on experience is merely a “perceived expertise” (Bou et al., 2006, p. 10) rather than in reality. The argument of Fuller and Unwin (2004) also supports this idea. They argue that it is not rational to treat the new entrants as a novice because they can also have obtained a certain level of expertise before entering the job. In different cases, such a person considered a novice can teach other workers who are considered experts.

For this study purpose, I have distinguished the research participants of this study based on expertise related to work experience (Lave & Wenger, 1991). The workers who have already obtained considerable work experience and skills level are the experts. Similarly, those workers who have entered the job comparatively recently and have low skills and competency are considered novices.

Informal skills learners are the vulnerable groups of people considering different

aspects of their work, such as uncertainty of continuing the job. Although informal skills learners face similar situations during the initial phase of their work, the skilled workers with long work experience have already reduced vulnerability. In addition, the improved market demand, the increased income, social identity, and the social wellbeing of expert workers make them less vulnerable.

Recognizing Vulnerability of Workers in Informal Employment

Informal skills learning is associated with a job in the informal setting that creates multiple vulnerabilities. The vulnerability has multiple dimensions (Alwang et al., 2001). Although the understanding of the concept differs according to the field of study, it generally connotes the perception of risky situations that can exist diversely. According to Adger (2006), vulnerability exists when a person feels stressed and suspects harm, and there is an “absence of capacity to adapt” (p. 268). According to Alwang et al. (2001), resilience and sensitivity are two dimensions of vulnerability. It indicates that even in a similar situation, diverse persons can have a different level of vulnerability. A resilient person might be less vulnerable than a sensitive one.

According to Hufschmidt (2011), vulnerability is a complex concept, and different features determine it. Such features include context where vulnerability situates, its dimensions, temporal variability, presence of multiple scales, and their interdependencies. Thus, it is equally challenging to measure, for the concept itself is difficult to understand.

In the places where informal economy prevails, workers and employees are naturally vulnerable (Bhorat et al., 2016; Blaauw, 2017; Burgess et al., 2013; Mannila, 2015; OECD & ILO, 2019). Those workers employed in the informal sector and those having informal employment have multiple “layers of vulnerability” (Bhorat et al., 2016, p. 18). Mainly their vulnerability is created through the interaction of informal work and low pay. Furthermore, low-skilled workers with less experience face multiple vulnerabilities associated with the little education, competency, insecure job, weak economic condition of the family, etc. Most informal workers (except in traditional occupations) are always in danger of losing the job if they do not complete tasks in the stipulated time and of a given quality.

Blaauw (2017) studied the vulnerability of the informal workers of South Africa. He explored that the informal sector is a significantly less researched field, and therefore, many things remain unexplored. He characterizes these unsearched phenomena in the informal sector as “missing pieces in the vulnerability puzzle” (p. 339). However, there is no debate among scholars about the vulnerability of informal workers. A study conducted jointly by the OECD and ILO (2019) emphasizes that the present challenge is to tactfully manage the vulnerability of more than two billion workers engaged in the informal sector globally.

The dimension of vulnerability is more critical in places with less developed labor markets because they are deprived of many basic facilities and benefits, such as occupational safety and security, health protection, and other provisions mentioned

by the national legal documents. According to Mannila (2015), those informal workers who are aligned voluntarily at work might not be that vulnerable. Still, those who have opted for informal employment as compulsion are more vulnerable. As he observed, the situation of Nepal in this regard is worse because there is minimal provision of vulnerability management.

Work Interruption: An Established Research Field

Disturbances at work are universal phenomena. Except for planned and regular breaks, those interruptions negatively affect the work overall (Foroughi et al., 2014; Puranik et al., 2020). As a workplace is a complex system (Ellström et al., 2008; Illeris, 2007), the work environment plays a significant role in the presence of work intrusions. Despite the impact of work interruptions on both quality and quantity of work, industries and academia have paid attention to this dimension. As such, work interruption appears to be a promising research area. In fact, it is an established research field (Fisher, 1998; Lin et al., 2013; Puranik et al., 2020) although there is a great need for further research in different aspects of work interruption.

Understanding the work interruption is not that complex. According to Puranik et al. (2020), work interruptions are the situation where the ongoing work activity is interrupted, which include “suspension of behavioural performance, and suspension of attentional focus” (p. 3). It means a worker might have to stop the work. Furthermore, a work interruption diverts the attention of a person to other subjects (Fisher, 1998;

Keller et al., 2020), which negatively affects the work. The sources of work interruptions are of two categories - external and internal. The external work interruptions are those hindrances due to other people or the work context (Brumby et al., 2019; Keller et al., 2020). For instance, visitors coming to the workplace, telephone calls, and other communication, such as messages and urgent emails, sudden calls from the team members, including colleagues and seniors, are some examples of external work interruptions. Such interruptions occur without the willingness and control of the individual affected worker (Keller et al., 2020). However, internal work interruptions are those caused by the particular worker themselves.

Whether an interruption is external or internal, it affects the work negatively (Adler & Benbunan-Fich, 2013; Brumby et al., 2019; Fisher, 1998; Foroughi et al., 2014). Interestingly, external work interruptions can create the basis for internal disruption. For example, different adverse psychological conditions, such as frustrations at work, helplessness, and the need for repeating demand more effort and energy. Such situations can create “boredom” at work (Fisher, 1998, p. 503). Additionally, it can create internal work interruption within a worker (Brumby et al., 2019). Such a situation can increase errors, decrease accuracy, and ultimately degrade productivity and quality of work (Adler & Benbunan-Fich, 2013; Brumby et al., 2019; Foroughi et al., 2014).

Multitasking also can create work interruptions (Adler & Benbunan-Fich, 2013; Kirchberg et al., 2015; Puranik et al., 2020). Although how much multitasking an individual can manage depends on the

individual characteristics, it affects overall work execution. For instance, a person with monochromic nature - who has the trait of working on one task at a time - has less capacity to perform multiple parallel tasks. On the contrary, those with polychromic nature can manage numerous tasks simultaneously, and such people are less affected by work interruptions (Kirchberg et al., 2015).

Dilemmas Related to Work Interruption

Qualitative researchers face multiple ethical and methodological dilemmas during the research process. Methodologically, the researchers strive to obtain the required information, and ethically, they have to work in the manner of causing no harm to the research participants. However, at times, researchers have to face dilemmas regarding the condition of no-harm. Depending upon the research field and contexts, such dilemmas can differ. Addressing dilemmas in the research process is not a one-time requirement; instead, it is a continuous process extending to the whole research period (Fujii, 2012).

According to Allmarket et al. (2009), researchers generally face two types of dilemmas during the research. The first category of dilemmas is those which are prevalent in most cases. However, some dilemmas are specific to the context. Researchers dealing with vulnerable people can face typical dilemmas (Fujii, 2012). In addition, they have to negotiate with multiple people, as dilemmas occur from diverse relations, expectations, and demands (de Laine, 2000). Comparing the research process as a show stage and the research participants and other associated people as audience, de Laine (2000) argues that the

researcher/performer needs to avoid harm to the audience. According to her, researchers should be situational and cautious about reducing harm to the research participants and merely “codes are not adequate to deal with ethical dilemmas of fieldwork” (p. 144). In fact, the written protocol of research ethics may not apply in the Nepali cultural context (Dhakal, 2021), and thus researchers need to adhere to relational ethics (Tracy, 2013).

As the informal skills learners are the vulnerable workers, how to avoid their harm during the research should be the concern of the researchers working with them. Although informal skills learners face multiple challenges, one of the significant challenges is that they always have to work under time pressure. Thus, the researchers’ major dilemma is how to minimize work interruption of the informal skills learners while performing the fieldwork. To explore this phenomenon, it is necessary to look at the issue qualitatively.

Methodology

Positioning myself in the interpretive paradigm, I have prepared this paper adopting a qualitative research approach. The paper is an outcome of my PhD research entitled ‘Informal skills learning: A case study of small-sized enterprises in Nepal’. In this paper, I discuss one dilemma that researchers might have to face while researching with the participants who are vulnerable because of socio-cultural and political reasons. I discuss that informal skills learners are often not interested in us (i.e. researchers) or even might try to avoid us while we try to interview them, as they are a vulnerable group of people. They can be affected

by work interruptions while conducting interviews during the research process. Therefore, they can hesitate to participate in interviews. However, researchers can minimize such hesitations considerably and avoid harm to them through tactful conduct of the interviews.

Among the 17 research participants from my PhD research - from four occupational sectors, namely pottery, metalcrafts, cafeteria, and two-wheeler mechanics - I have selected 14 research participants for this study and obtained information on their vulnerabilities. I have used different pseudonyms to refer to them. Among these fourteen participants, six were novices from the vulnerable category (see Table 1), considering different aspects, such as poverty, low educational qualification, ethnicity, language and gender. The major basis for categorizing novices was their relatively lesser work experience and the junior position in the enterprise. However, the other eight research participants were relatively matured and in higher work position. The main rationale for selecting the research participants was their present and past experience about the vulnerabilities associated with work interruptions.

Table 1

Brief Information of Research Participants

| Occupation | No. of participants | Name (Gender/Age) |
|----------------------|---------------------|---|
| Pottery | 4 | Lambodar (M/55), Keshav (M/50), Damodar (M/35), <i>Indralaxmi (F/30)</i> |
| Metalcrafts | 4 | Yuvaraj (M/50), Amod (M/45), Gaurav (M/30), <i>Jiwa (M/25)</i> |
| Cafeteria | 2 | Ramila (F/40), Chandrika (F/25) |
| Two-wheeler workshop | 4 | Ratna (M/45), Dinesh (M/40), <i>Suraj (M/25), Sanju (M/20)</i> |

Note: Research participants in vulnerable category are mentioned in bold and italics.

I performed *kurakani* with these research participants during the observations of their natural work settings. My fieldwork was prolonged for fifteen months (from September 2018 to November 2019). I met my research participants during their work hours from 7-8 in the morning till 7-8 in the evening. I transcribed the information received from the interviews and observations, and analyzed using the eighth version of Atlas.ti. Based on the fieldwork, I also presented the general features of my research participants or informal skills learners, which makes them vulnerable to work interruption and other associated consequences, such as psychological pressure and tension. I found that informal skills learners are multi-role and time-scarce people. These findings supported me in analyzing informal skills learners' vulnerability and dilemma it created for a researcher. Finally, I discuss and present a model for addressing the work interruption dilemma while dealing with informal skills learners and minimizing their harm.

In the following section, I present the information received from the field on the general characteristics of informal skills learners. These characteristics make them vulnerable, which a researcher has to take thoughtfully.

What Makes Informal Skills Learners Vulnerable? The Research Experience

Informal skills learners are different from other workplace learners (e.g. who work in the formal work provisions and learn skills comparatively in an organized way) because of the type and nature of their work, work setting, and social conditions (Baral, 2020b). Therefore, characterizing informal skills learners require dedicated studies in the

field. Following are some of the features of the research participants I identified during the study and their vulnerabilities associated with these features.

Multi-Role Makes Informal Skills Learners Vulnerable

Informal skills learners learn diverse skills according to the nature of their job. In general, such a multi-skill approach to working and learning is more necessary than those with narrow and focused specialized skills (Lindbeck & Snower, 2000). This study revealed that informal skills learners mostly have general work and very few cases of specialized work. Among the four occupational fields researched, work specialization was prevalent only in the metal arts and crafts. In the other three occupations - pottery, two-wheeler mechanics, and fast-food workers were engaged in multiple works and have learned numerous skills simultaneously. Nevertheless, they were under time pressure performing multiple tasks in parallel as they had to work with minimal resources and rely on comparatively traditional technology.

The potters I interviewed mentioned that they had learned all types of skills, starting from quarrying clay to preparing and marketing the produced items. The only exception was in the potter-couple Damodar and Indralaxmi, who run their traditional pottery at Nikosera, Thimi. Although their present work focus was making art items, Damodar acquired all the skills required to produce pottery utensils. However, as Indralaxmi learned the pottery skills only after getting married and entering the family of Damodar, she does not have other pottery skills, such as producing

simple utensils. Even in making pottery art items, Indralaxmi performs multiple tasks.

In the metalcrafts sector, a single worker/skills learner was also learning diverse skills simultaneously. However, such diversity of work was not feasible in all circumstances. For example, a young metal artist, Gaurav, the son of a metal enterprise owner, thought learning all skill sets is generally not possible. *“If a person has to do everything, it is more time consuming”*, mentioned Gaurav and added that one has to know the general skills. A similar version was of another young artist, Jiwa, who shared that though his concentration was on preparing *buttas* [patterns] and artistic clothing items, he also had to work in other works, such as *Thojya*¹, *Majya*², and *Katanjya*³.

In two-wheeler workshops, informal skills learners were engaged in multiple tasks, starting from simple cleaning and storage skills to highly technical engine assembling skills. Not only the workers but also the owners were found performing each type of task as their juniors. Multitasking is found rampant also in the cafeteria sector. I noticed that the café-workers were performing every task as demanded by the situation. So, they all know the skill set required by the occupations. For example, Chandrika, a young café worker, performed simple cleaning works to calculation, billing, and customer-dealing as her owner performs.

It is not always appropriate to compare small-scale enterprises with large organized firms because of their different features (Coetzer

et al., 2017). Nevertheless, the multi-role and multitasking opportunities that informal skills learners obtain can be instrumental in their future careers. For example, Lindbeck and Snower (2000) insist on the superiority of multi-skills upon specialized skills. Similarly, de Grip (2015) stresses the “growing demand for multi-skilled workers” (p. 3) in the contemporary occupational world. Such multitasking contributes to enhancing competency and the effectiveness of work performance.

However, the multitasking of informal skills learners is also associated with the limited resources and little use of technology. This situation creates pressure on them to complete the assigned task on time. Once, Chandrika, a lady café worker, expressed how they have to perform works manually:

Regarding the use of technology, we do not use any technology except one grinding machine. We use this machine for crushing raw meat. In other tasks, we absolutely have to rely on our manual work. We have to spend more time for mixing flour, chopping vegetables, cleaning dishes and pots. If we had such facilities, I could accomplish the work timely and also learn how to operate these devices. [Field note, 17 April 2019]

The expression of Chandrika shows that they have to compromise with the work environment. Furthermore, they have to work with very little freedom of interruption of work voluntarily. Instead, they have to follow the instructions of the supervisors and owners, which can be derogative in certain circumstances. From this, I inferred that despite multiple benefits, informal skills learners have to work under extreme time pressure, creating vulnerability.

1 Making shapes from the sheet metal

2 Fixing the prepared sheet metal shapes as per the design

3 Cutting of the unnecessary part of the art item

Time Pressure at Work Makes Informal Skills Learners Vulnerable

Time as a resource is scarce for all, including informal skills learners. Nevertheless, the situation of informal skills learners is found more critical. Surprisingly, I had no single case of meeting with the novice research participants for the interview at the agreed time. Therefore, I had to postpone the planned interviews and reschedule the fieldwork. I noted some reasons for such situations of postponements. Firstly, the informal skills learners' work nature is such that they rarely have planned free time. If they have such free time, a prior estimation of such free time is not viable due to the possibility of the sudden arrival of the customers. Secondly, I mostly met those workers busy- engrossed in their work, and it was thus not easy to interrupt their work in between. The third, informal skills learners, except the senior ones, could not decide independently for their time allocation other than workplace activities.

Although some potters mentioned that one of the significant reasons for enjoyment with their occupation is its flexibility, they were found busy in their work whenever I met them. Once, when I was requesting Lambodar, an aged potter, for facilitating to introduce his elder son Damodar (the next research participant), he alerted me that the son might be busy and “*can talk while working.*” Only after I promised not to disturb his son, he brought me to the workshop of Damodar.

Informal skills learners working in metal art and crafts were also acutely busy. For Yuvaraj, the senior artist and the enterprise owner, it was apparent that he had multiple roles to perform. He led the enterprise and also provided drawings of all art items to

the working units. But, all other workers were also busy during the work hour. I had multiple instances of postponement of the interview due to the unavailability of their time. The following field note depicts such an event of cancellation of the interview with Jiwa, a young metal artist:

I had the first initial conversation with Jiwa in the group of workers [Enterprise] on 23 May 2019. After that, I tried repeatedly to obtain his time for the interview. However, it was not possible due to his busy work routine. The last time when I requested him, it was on the eve of Dashain⁴ vacation. I got the information from other senior colleagues of the same firm that they are too busy during this festival. So, I had decided to contact Jiwa only after upcoming important festivals. [Field note, 9 November 2019]

Some of the metalcraft works are also related to religious practices and thus make workers extra busy. Such postponement and repetition of the visit were also in the motorcycle mechanics enterprises. I had such experience during the field visits to three two-wheeler workshops. In the initial days of my field visit, once I had scheduled a meeting with Suraj at 8:00 am. However, he could not provide me the time and I had to postpone the scheduled interview. The field note depicts:

...But when I arrived, the boy was already busy removing the tyre from a motorcycle. When he saw me, he smiled and said, “Uncle, actually, I thought this time would be free but (showing the customer) he

4 Dashain is one of the greatest festivals celebrated by large majority of Nepal.

came with this punctured motorbike. So, I think I will not be able to manage time now.” [Field Note, 9 November 2019]

It is natural that as informal skills learners work in an informal setting in small-scale private enterprises, free time is rare. Another constraint was that they have very few off-days. For instance, there was only one day leave each month, as Sanju, a novice mechanic, shared me once. I could not catch him for the interview despite multiple encounters during the observation visits. One of my reflections of such an unsuccessful attempt at the meeting is as follows:

I was trying to have a separate conversation with Sanju for a long time but did not get the opportunity. Last week, he did not receive telephone when I called at the agreed time. The discussion could not be held. During my observation visit, when I asked Sanju why he did not pick the telephone last Saturday, he replied that he was exhausted and busy with other works at residence. [Field Note, 01 July 2019]

This expression of Sanju indicates that their working condition is such that they do not have sufficient leisure and recreational time. Similar to motorcycle workshops, I saw hectic workers also in the café. As a result, I had to postpone multiple appointments because they were not free from regular work. Furthermore, all three persons have to manage works in addition to the café. For instance, Chandrika, a novice café worker, had to balance her education, another part-time job tutoring small children, and the café work simultaneously.

Thus, informal skills learners are extra busy people. The version of Curran and Blackburn

(2001) in the small business sector strongly supports this conclusion. They alert the novice researchers that they have to take special care in performing the research activities with the participants from this field. First, due to the scarcity of time, they might not prioritize participation in the research process. Next, the research participants might not see the relevance of research with their work. Therefore, they generally are not in the condition to allocate time for lengthy interviews. These cautionary statements support the general condition of informal skills learners that they work and learn under time pressure. On one side, they have to accomplish the tasks in a given time frame, whereas, on the other, they have to learn the occupational skills because they do not have separate dedicated skills training. Thus, their skills learning process is slower and steadier than other intentional learners. They actually do “work” rather than “learn”. Their learning is the bi-product of the work. So, not having separate skills learning opportunities and working in insecure job conditions make people vulnerable.

Addressing Work Interruption Dilemma While Interviewing

This section analyzes how informal skills learners face work interruptions and what types of dilemmas the researcher can face while interviewing them. For doing this, I first point out those typical situations and subsequent conditions of dilemma. In the second sub-section, I present my field experience of tackling these dilemmas with a model of addressing work interruption dilemmas.

Sources of Informal Skills Learners' Vulnerability

Novice workers who have a low level of skills face difficulties to manage. The need for timely completion of the stipulated job with acceptable quality puts them under pressure. When a researcher requests for an interview or *kurakani*, informal skills learners can feel extreme time pressure about which they might not express openly.

Researchers could ask to arrange an interview during leisure or off-days. Unfortunately, being informal workers, they might not make dedicated free time. Mainly, such times depend upon the supervisors' or the owner's discretion. So, there is always a possibility of the postponement or cancelling the scheduled interview. Multiple instances of postponement keep researchers in quandary whether to wait for the same research participant or search for another appropriate one. I faced numerous such dilemmas during the fieldwork.

Informal workers with the occupations related to the traditional culture have their workload intensified during certain festival seasons or events. During such periods, informal skills learners face the extra burden of delivering products or services. My field experience indicates that informal skills learners cannot see whether they would be able to give time to the researcher and agree to sit for the interview, which later has to be cancelled or postponed. A researcher faces the dilemma of avoiding such special work periods of informal skills learners.

Naturally, a human needs two other things together with the work or labor - rest and entertainment. But, novice informal skills

learners are generally like "precariat" (Standing, 2011; p. 1) who have a very fragile job. Due to such conditions, they might be in the situation of ignoring the pre-scheduled interview. For example, during my fieldwork, some research participants refused to sit in the scheduled time and expressed without hesitation that they could not participate in the conversation due to fatigue.

Another crucial point is that informal skills learners are not, in reality, *learners* from employers' perspectives. For the supervisors or the owner, the primary goal of employing a person is to produce goods or services. So, informal skills learners also have to assure their seniors that they participate in the interview without compromising their work. During the fieldwork, I mostly found supervisors and owners of the enterprises cooperative. However, another associated problem was that the workers could not express their views openly, particularly when their supervisors were near them. A point to be noted is that it is not always possible to sit with informal skills learners in different venues than their workplaces.

Moreover, frequent change of workplaces was also the reason for making informal skills learners vulnerable. Those who had already spent sufficient time in the particular enterprise were more unrestricted for deciding their time. On the contrary, it was not under their control for the new entrants and comparatively novices. They had less possibility to devote time for interviews.

During the fieldwork, I had adopted some strategies for tackling the situation of dilemma and avoid harm to the research participants. In the following sub-section, based on my field experience, I present how I addressed

these dilemmas. I also present a model (see Figure 1) depicting features of informal skills learners that make them vulnerable and ways of tackling the situations.

Tackling Work Interruption Dilemma

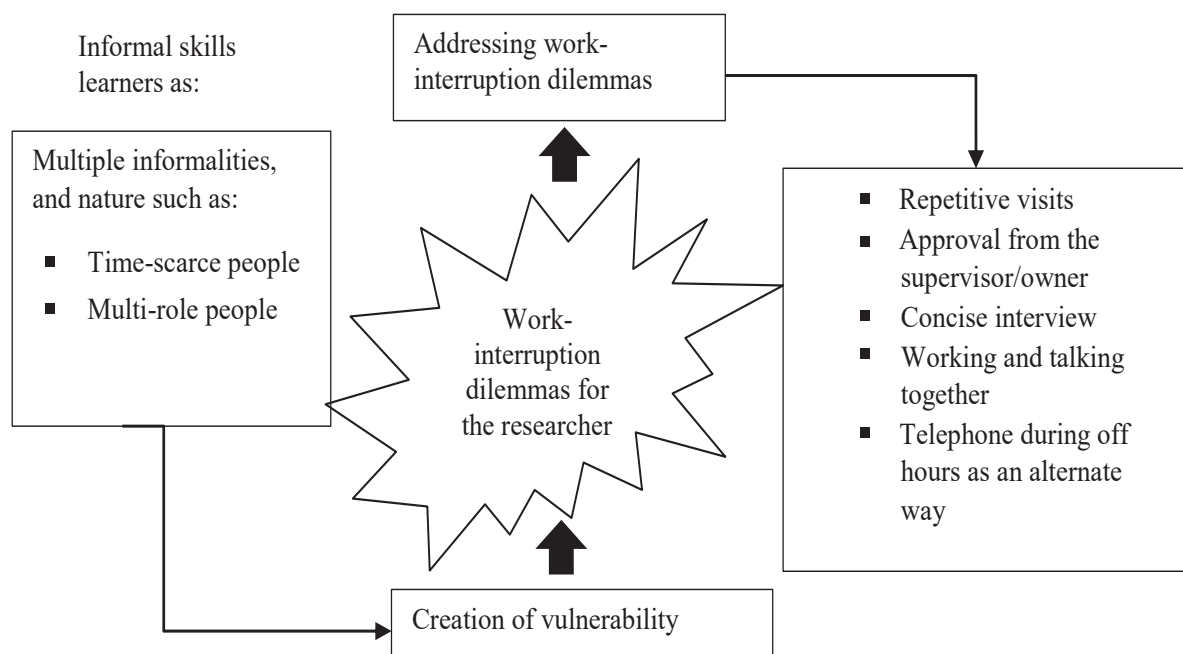
Whether a researcher wants or not, my field experience shows that he/she might have to repeatedly visit informal skills learners to complete the interview and conversations. Continuous effort is the only way to deal with such a situation. A researcher has to make a *Plan B* for envisioning the possible cancellation or postponement of the interview schedule with the informal skills learners. To avoid the probability of refusal from the

supervisors or owners, the researcher needs to obtain their prior consent. Except in very few cases, this is a must.

The next crucial point the research should consider is that informal skills learners do not have the privilege of sitting for a lengthy interview. It can push them into a further challenge in meeting the demand of quantity and quality of the work, ultimately putting them under pressure. So, if possible, the interview duration should be as minimum as possible. I tried to make interview sessions concise which were also interrupted frequently in between due to unavoidable urgent tasks.

Figure 1

Creation of Work Interruption Dilemma and Ways for Tackling Them



According to my field experience, another strategy for studying informal skills learners is frequent visits to their workplace. Whether stipulated interview could or could not happen, the workplace visit aimed for the interview can provide numerous information. In other words, the researcher can convert the specified interview hours to observations and perform *kurakani* during the observation as appropriate. Furthermore, such frequent visits support strengthening rapport and having informal conversations (if their task permits). The researcher can also fulfil some of the voids of information obtained from informal communication through telephonic conversations. However, there is always a possibility of not picking the telephone calls due to different reasons. For example, experience of fatigue and the presence of a senior might lead the participants to not respond to the calls. In such a case, the researcher should not bother the participants by repeatedly calling on the same day, but can try next day or in a few days' interval.

Conclusion

This paper explained how researchers studying informal skills learners could perform their fieldwork without harming their research participants. Notably, it focused on addressing one of the crucial challenges of saving novice skills learners as research participants from interrupting their workflow due to lengthy interviews. Although the researchers working with informal skills learners have to face work interruptions, it is also a concern while working with the research participants from other fields. However, this article accentuates that the job situation of the informal skills learners and their associated vulnerability are peculiar,

which need serious consideration during the fieldwork.

There might be different ways and strategies to address the vulnerabilities and work interruptions of informal skills learners during the fieldwork with them. For instance, the researcher's experiences of conducting telephonic interviews with informal skills learners during their off-hours can be presented more specifically. In addition, this article also shows the need for further research, particularly in understanding thoroughly the work environment of the informal skills learners. However, the concluding message of this paper is the urge to the researchers to save the already vulnerable group of people from the additional vulnerabilities during the research process.

Acknowledgements

I thank the Swiss Agency for Development and Cooperation (SDC), The Swiss National Science Foundation, and SDC Nepal for financing the research. I am grateful for the inputs and support provided by Prof. Mahesh Nath Parajuli. Similarly, I thank Mr. Prakash Kumar Paudel and Dr. Rebat Kumar Dhakal for shaping and editing the paper.

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Article

Effectiveness of TVET in Nepal

Ramesh Adhikari^{*a}, Shiva Raj Adhikari^b, Dilli Ram Upreti^a and Keshav Prasad Adhikari^c

^aMahendra Ratna Campus, Tribhuvan University

^bCentral Department of Economics, Tribhuvan University

^cCentral Department of Population Studies, Tribhuvan University

Abstract

The technical and vocational education and training (TVET) program has been implemented in the country for a long time. Nevertheless, the actual impact it had made on the national economy is unknown. The main objective of this study is to examine the effectiveness of the TVET program in Nepal. The study employed concurrent mixed methods which used both quantitative and qualitative approaches. A retrospective post-then-pre design was used in this study. A total of 21 districts (3 districts from each province) were selected. A survey was conducted with 1,231 Diploma and Pre-Diploma (TSLC) graduates who studied in the institutions either affiliated to or constituent of the Council for Technical Education and Vocational Training (CTEVT). Similarly, 42 key informants' interviews (2 from each district) were conducted with key stakeholders, such as school principals, instructors, and employers. Overall, out of the total graduates, only 8.8% were working before joining TVET, and the remaining 91% did not work, while the percentage of graduates employed during the time of survey was 58.2%. A remarkable difference in average income was found before and after graduation (NRs 1,815 vs NRs 15,656). The income difference was highest among the people who studied engineering (NRs 16,005) followed by health (NRs 14,908). The income of males was 1.6 times higher than that of females after graduation. Current income is higher among graduates from Lumbini Province (NRs 21,427), followed by Province-1 (NRs 20,396). The study revealed that overall, TVET has a positive impact on the society's economy through increased employment opportunities among youths. TVET has been effective in generating employment for many young people, ultimately contributing to elevate the family's economic status, thereby ensuring quality life.

Keywords: Technical and Vocational Education and Training, CTEVT, impact, relevance

Background

The technical and vocational education and training (TVET) is an integral part of development in a nation. It empowers youths by enhancing their skills required for the world of work. Realizing the strength

of TVET, the government of Nepal has set the goal of increasing TVET enrolment to 70% from the current around 10% and augmenting the number of people with skills training to 50% from the current 31%

^{*}Corresponding author. Email: rameshipsr@gmail.com

(National Planning Commission [NPC], 2019). A large number of the labor force in Nepal (about 70%) gains professional skills in the workplace informally (International Labor Organization [ILO], 2017). Likewise, among the youth, 59% migrates without any professional skills for foreign employment in different Gulf countries and Malaysia (Ministry of Labor, Employment, and Social Security [MoLESS], 2020). This grim situation could be changed by a robust TVET system which is closely tied to economic sectors/businesses and industries that could define the current and future labor market.

The studies conducted by Chakravarty et al. (2015) accessed the short-run effects of skills training and employment placement services sponsored by the Employment Fund from 2010 to 2012 in Nepal and found the heterogeneous impact of the programs on different sub-population- women, age-group, and ethnicity. The skills training positively impacted employment (about 50%) and increased monthly average earnings (about 72%). The study also revealed that the women benefited more than their counterparts. Similarly, a tracer study of the Diploma and TSLC programs under CTEVT found the monthly average earning of the graduates was Rs 15,816, which ranged from Rs 4,000 to Rs 87,000 per month. Around 75 percent of the graduates in three trades (Engineering, Health, and Agriculture) were either employed or in education during the interview period (AIPL, 2016).

The impact of TVET is realized on both levels of graduates and employers. In the first level, TVET improves the livelihood of the graduates, as they are equipped with the skills required for the world of work (SEFPE, 2008). In the second level, it fulfills

the demand of employers by supplying competent human resources. A study carried out in the Philippines revealed that about 71 percent of the graduates were active in the labor force, and those who were not in the labor force were mainly due to study-related reasons (currently continuing their study) (TESDA, 2020). The study also found there was no statistically significant difference between male and female graduates in terms of employability. The study showed that the TVET programs helped to increase the employability of the graduates, and they were satisfied with the training they received.

In the context of Nepal, the study on TVET graduates showed that employers generally are more satisfied with the workers who were trained from CTEVT (AIPL, 2016). However, the study also showed that 80 percent of employers believe that the workers need additional training to perform better in the workplace. The graduates also reported that there was a need for improvement in the TVET education provided by the institutions in several dimensions like content knowledge, opportunities for practical skill, and curriculum or content, laboratory practice, instructional technique, industrial attachment, on-the-job experience, etc.

In view of scant TVET literature in the national context, this study is believed to build to important knowledge on the relevant stakeholders. The study also provides a direction for further planning and implementing relevant programs to uplift the status of TVET graduates. Hence, this study is vital to determine the significance of the TVET program, including its future implications. The main objective of this study is to examine the effectiveness of the TEVT program in Nepal.

Methods

The study employed concurrent mixed methods, which used both quantitative and qualitative approaches. A retrospective post-then-pre design was used in this study. A survey was conducted with the respondents who had joined the Diploma or Pre-Diploma program of the CTEVT. It covered all seven provinces of Nepal. A total of 21 districts (3 districts from each province) were selected. The survey was conducted with 1,231 Diploma and Pre-diploma (TSLC) graduates who studied in the institutions either affiliated to or constituent of the CTEVT. Similarly, 42 interviews (2 from each district) were conducted with graduates and other key stakeholders, such as school principals, instructors, and employers. The study participants and informants were interviewed with verbal consent. The consent process ensured that the respondents were well-informed about the interviewer, the purpose

of the study, their voluntary participation, the confidentiality of information, anonymity of the informants, time duration, and risk and benefits of their participation in the study. Statistical Package for Social Science (SPSS) was used for the data analysis.

Results

Background Characteristics

Nearly three-fifths (57%) of respondents were male, where around three-fourths (73%) were aged less than 25 years, and more than half were Brahmin/Chhetri (57%). Similarly, three-fourths (75%) were unmarried/never married. Regarding the level of education, 60% had completed a diploma, followed by a pre-diploma (36%), and only 5% had completed a Bachelor's or above at the time of the interview. Likewise, more than two-fifths (45%) studied in a private institute, followed by a constituent institute (25%).

Table 1

Background Characteristics of Respondents

| | Overall | | Study Stream of Respondents | | | | | | | |
|--------------------|---------|------|-----------------------------|------|-------------|------|------------------|------|--------|------|
| | N | % | Engineering | | Agriculture | | Hotel Management | | Health | |
| | | | N | % | N | % | N | % | N | % |
| Sex | | | | | | | | | | |
| Male | 703 | 57.1 | 322 | 81.1 | 195 | 54.6 | 26 | 72.2 | 160 | 36.3 |
| Female | 528 | 42.9 | 75 | 18.9 | 162 | 45.4 | 10 | 27.8 | 281 | 63.7 |
| Age group | | | | | | | | | | |
| Less than 25 years | 896 | 72.8 | 291 | 73.3 | 276 | 77.3 | 23 | 63.9 | 306 | 69.4 |
| 25-34 years | 309 | 25.1 | 104 | 26.2 | 70 | 19.6 | 11 | 30.6 | 124 | 28.1 |
| 35-44 years | 25 | 2.0 | 2 | .5 | 10 | 2.8 | 2 | 5.6 | 11 | 2.5 |
| 45 and above | 1 | 0.1 | | | 1 | 0.3 | | | | |
| Caste/Ethnicity | | | | | | | | | | |
| Dalit | 68 | 5.5 | 22 | 5.5 | 24 | 6.7 | 1 | 2.8 | 21 | 4.8 |

| | Overall | | Study Stream of Respondents | | | | | | | |
|----------------------------|---------|-------|-----------------------------|-------|-------------|-------|------------------|-------|--------|-------|
| | N | % | Engineering | | Agriculture | | Hotel Management | | Health | |
| | | | N | % | N | % | N | % | N | % |
| Muslim | 9 | .7 | 5 | 1.3 | 4 | 1.1 | | | | |
| Madheshi | 177 | 14.4 | 54 | 13.6 | 40 | 11.2 | 2 | 5.6 | 81 | 18.4 |
| Janajati | 262 | 21.3 | 73 | 18.4 | 62 | 17.4 | 15 | 41.7 | 112 | 25.4 |
| Brahmin/Chhetri | 695 | 56.5 | 233 | 58.7 | 222 | 62.2 | 18 | 50.0 | 222 | 50.3 |
| Others | 20 | 1.6 | 10 | 2.5 | 5 | 1.4 | | | 5 | 1.1 |
| Marital status | | | | | | | | | | |
| Never married/Unmarried | 917 | 74.5 | 326 | 82.1 | 255 | 71.4 | 32 | 88.9 | 304 | 68.9 |
| Currently married | 312 | 25.3 | 71 | 17.9 | 102 | 28.6 | 4 | 11.1 | 135 | 30.6 |
| Separated/divorced | 2 | 0.2 | | | | | | | 2 | .5 |
| Level of education | | | | | | | | | | |
| Pre-diploma | 441 | 35.8 | 147 | 37.0 | 176 | 49.3 | 18 | 50.0 | 100 | 22.7 |
| 10+2/diploma | 735 | 59.7 | 224 | 56.4 | 172 | 48.2 | 17 | 47.2 | 322 | 73.0 |
| Bachelor and above | 55 | 4.5 | 26 | 6.5 | 9 | 2.5 | 1 | 2.8 | 19 | 4.3 |
| Type of institute | | | | | | | | | | |
| Constituent institute | 301 | 24.5 | 130 | 32.7 | 80 | 22.4 | 18 | 50.0 | 73 | 16.6 |
| Partnership institute | 110 | 8.9 | 41 | 10.3 | 3 | .8 | 2 | 5.6 | 64 | 14.5 |
| Private institute | 558 | 45.3 | 167 | 42.1 | 90 | 25.2 | 15 | 41.7 | 286 | 64.9 |
| Community school/institute | 262 | 21.3 | 59 | 14.9 | 184 | 51.5 | 1 | 2.8 | 18 | 4.1 |
| Province | | | | | | | | | | |
| Province-1 | 80 | 6.5 | 35 | 8.8 | 19 | 5.3 | | | 26 | 5.9 |
| Madhesh Province | 160 | 13.0 | 57 | 14.4 | 38 | 10.6 | | | 65 | 14.7 |
| Bagmati Province | 354 | 28.8 | 118 | 29.7 | 63 | 17.6 | 17 | 47.2 | 156 | 35.4 |
| Gandaki Province | 106 | 8.6 | 25 | 6.3 | 28 | 7.8 | 19 | 52.8 | 34 | 7.7 |
| Lumbini Province | 215 | 17.5 | 80 | 20.2 | 45 | 12.6 | | | 90 | 20.4 |
| Karnali Province | 156 | 12.7 | 51 | 12.8 | 80 | 22.4 | | | 25 | 5.7 |
| Sudurpaschim Province | 160 | 13.0 | 31 | 7.8 | 84 | 23.5 | | | 45 | 10.2 |
| Total | 1231 | 100.0 | 397 | 100.0 | 357 | 100.0 | 36 | 100.0 | 441 | 100.0 |

Relevance

Relevance assesses the extent to which a program is consistent with community needs and government priorities. Technical education and vocational training are quite relevant, as they were designed based on community needs and market demand. There

was high demand for technical education and training related to agriculture, health, hotel management, engineering, etc. after a thorough market study. It has addressed the needs, issues, and priorities of trainees. CTEVT offers education and training at the

minimum possible fees and provides some scholarships to the economically backward people, making technical education affordable and accessible for poor and middle-income individuals. This makes the program more relevant because it addresses the necessity of most underprivileged people. All stakeholders agreed that TVET had been based on the community's actual needs. It has been more relevant and helpful in rural areas, where people cannot afford expensive education and need employment opportunities at a very young age to support their households for livelihood. Similarly, TEVT has been fruitful in generating employment at an early age. However, due to inadequate scholarship seats, ultra-poor people' access to TVET is limited. TVET training related to agriculture and veterinary is more relevant in our country, where agriculture is still a major source of income and livelihood for many people. Many stakeholders predict that the demand for technical human resources will increase shortly.

Although most of the programs are relevant in the community, certain areas/subjects should be added up (such as geometrics and hydropower engineering in the engineering field) to address the needs of contemporary society. Similarly, the curriculum can be developed to address the need of community in two models. Only practical courses can be offered to those students who want to end their studies after training and work. The second model similar to the course of formal education can be offered for those students who want this course as a bridge course for further education. Hence, it can be concluded

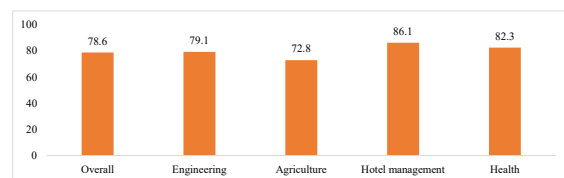
that courses are not enough to meet the need/demands of the present-day market.

Relevance of Programs Based on Graduates' Applicability

The relevance of the Diploma and Pre-diploma level programs was explored in the study by asking whether the present/last job was related to the area of specialization, which most of them (79%) said that it was relevant. A higher proportion of respondents from hotel management (86%) and health stream (82%) mentioned that the program was more relevant than in case of engineering (79%) and agriculture (73%). Those who mentioned training as relevant were further asked about the degree of applicability; overall, a third stated it was highly applicable; 44% mentioned it was highly applicable, and 22% mentioned it was average. Similarly, those who stated it was not applicable were further asked about the reasons in which nearly a fifth (18%) responded that it was due to a lack of job opportunities to their application.

Figure 1

Relevance of the Program (%)



Efficiency

According to key stakeholders, technical education and vocational training produce maximum output with minimum cost. These

courses are imparted at nominal cost, yet produce more benefits through employment and self-employment of graduates.

Cost: The programs run efficiently in most institutions. Student fees are the primary source of income for privately-run institutions. However, the constituents and schools running programs in partnership receive regular government funds. Cost-effective measures, such as "*learn, earn and pay*" have been implemented in various agriculture-related institutions. However, it still needs to be more effective.

Our students produce seasonal vegetables and flowers and sell them to market to support their education. Stakeholder, Bhagawati Sec. School, Bagmati Province.

However, the program has been less cost-effective in certain institutions (health-related) which do not have their own hospitals for practical.

If we had our own hospital, the program would be more cost-effective, as we could operate the program with fewer staffs and students could be employed for maximum time as per their demand for practical. Manaslu Technical College, Province 1

Resources: Key stakeholders mentioned that TVET programs have produced maximum output with minimal resources (including human resources). Most TVET institutions had adequate resources to carry out the program smoothly. The trainers are skilled, capable, and motivated. CTEVT has been providing ToT to trainers/educators time and again. However, some institutions of Lumbini Province and Province-1 needed more human resources, including specialized

teachers/trainers and other resources. Hiring and remunerating expert trainers for a short period have also been challenging sometimes. Similarly, infrastructure (lab space, equipment, etc.) needed improvement in some institutions of Bagmati Province, Province-1. Local resources were being used in the training process as far as possible, contributing to cost-effectiveness.

However, barriers to new admission for Pre-diploma have affected the efficiency of institutions due to resource wastage. Likewise, due to minimal fee criteria, it has been difficult for some institutions to sustain and maintain full-time trainers/teachers. Similarly, certain institutions face a high turnover of part-time instructors/trainers, directly hindering efficiency. In this context, a stakeholder from an agriculture-related institution of Province-1 stated:

Mostly, we hire instructors on a contract basis who can leave the job if they find other opportunities. So, we can say that there are no sufficient instructors to run the program.

Time: According to key informants, TVET courses consisted of more content to be covered in a limited time. This has mostly resulted in rush and pressure during the study period. In addition, various political influences and crises (natural calamities, pandemics) can further prolong the entire study period.

Effectiveness

Effectiveness from Stakeholder's Viewpoint

Technical education and vocational training impart technical knowledge and produce skilled human resources in various

sectors like agriculture, engineering, hotel management, etc. It has been found effective in generating employment for many young people and ultimately elevating the family's economic status and ensuring quality life. Many people, including rural and poor ones, have been able to engage in income-generating activities through the skills they acquired with training. TEVT programs are directly linked with improving creative and practical skills required in daily life and obtaining the appropriate jobs. In other words, the programs provide relevant skills to fit the labor market. The skilled human resources are on rise in the labor market with increased number of new graduates.

Moreover, other businesses and industries are advantaged, as TEVT-skilled graduates work there and contribute to increased production/output. This ultimately contributes to enhancing the financial stability of society. While describing the effectiveness of TVET programs, stakeholders of different areas mentioned:

TEVT programs help to provide an immediate job after completing the vocational training. It also motivates students to become independent at young age. DTS stakeholder, Gandaki Province

Talking about this area, we can say 'One house, one technician'. The economic status of the nearby community has been boosted. Most of them are self-employed. Universal Technical School, Province 1

Many districts have become self-reliant on certain products due to increased production. TVET has become a significant tool for self-employment among youths. However, limited opportunities in some courses, such as

Pre-diploma/Diploma in hotel management, were discouraging for students.

The Pre-diploma / Diploma graduates of this institution can't intern in the foreign hotel industry, which demotivates the students who pursue this course. They choose BHM rather than diploma in hotel management. Program Coordinator, National Employment and Training Center

Likewise, another discouraging factor that adversely affects the effectiveness of the TVET programs is the higher workload coupled up with unsatisfactory remuneration in certain professions, such as nursing.

Apart from trainees, other people in the communities are equally benefitted from more skilled human resources, as they can obtain easy access to better facilities and services like health, agricultural products, etc.

On the contrary, demand-side stakeholders were quite unsatisfied with the quality of education and training acquired by the graduates as they complained that many graduates needed more basic skills to perform their work including the use of necessary equipment. In this context, a construction-side stakeholder stated:

Some newly passed graduates do not even have the basic knowledge. They do not know the cement sand ratio; cannot do layout; and cannot read level machines. These are the simple things that we expect them to know.

Hence, to enhance the program's effectiveness, the course and curriculum

should be pertinent to the market demand, consider the changes in the environment; and the program should be enhanced to equip the trainees with the necessary skills.

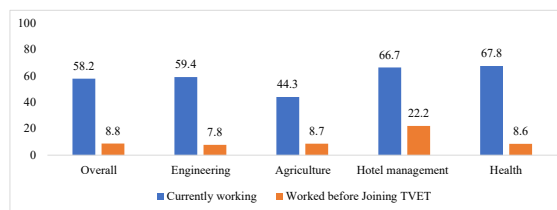
Effectiveness of Graduates' Findings

Graduates' experience and exposure-related factors, such as employment history, changes in income, promotion, job satisfaction, etc., can help to determine the effectiveness of the program.

Employment History/Situation

The proportion of employed people has increased notably after obtaining the TVET program. Overall, out of the total graduates, only 8.8% were working before joining TVET, and the remaining 91% did not work. Similarly, the percentage of graduates who were employed during the time was 58.2%. Nearly three-fifths (58%) of respondents were currently working, which included a higher proportion of respondents from the health stream (68%), followed by hotel management (67%).

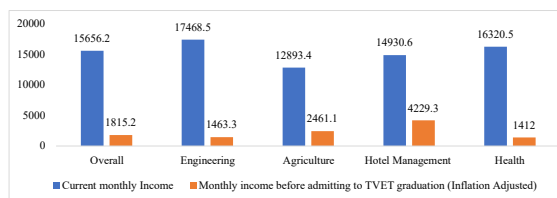
Figure 2
Employment History



Income before and after TVET Graduation

Inflation-adjusted the amount of income before joining the training. Inflation from 2015/16 to 2020/21 was 24.8%. Remarkable difference in average income before and after graduation is evident in the chart.

Figure 3
Income before and after TVET Graduation



Overall, there was an average income difference of NRs. 13,841. The income difference was highest among people who studied engineering (16,005), followed by health (14908).

Table 2
Income before and after TVET Graduation

| | Overall | Engineering | Agriculture | Hotel Management | Health |
|---|---------|-------------|-------------|------------------|---------|
| Current monthly income | 15656.2 | 17468.5 | 12893.4 | 14930.6 | 16320.5 |
| Monthly income before admission to TVET graduation (Inflation Adjusted) | 1815.2 | 1463.3 | 2461.1 | 4229.3 | 1412 |
| The difference in income after TVET Graduation | 13841 | 16005.2 | 10432.3 | 10701.3 | 14908.5 |

The mean income is significantly higher after graduation (p<0.001).

Table 3*T-test one-tailed test (current income > before inflated income)*

| Variable | Obs | Mean | Std. err. |
|---|-------|--------------------|-----------|
| Current income | 1,231 | 15656.18 | 603.5455 |
| Before income | 1,231 | 1815.249 | 199.93 |
| Difference | 1,231 | 13840.93 | 599.0964 |
| Mean(diff) = mean (current income, before income) | | t = 23.1030 | |
| H0: mean(diff) = 0 | | | |
| Degrees of freedom = 1230 | | | |
| Ha: mean(diff) != 0 | | Ha: mean(diff) > 0 | |
| Pr (T > t) = 0.0000 | | Pr(T > t) = 0.0000 | |

Mean Income (current and previous) by Background Characteristics of Respondents

The mean income and income differences variation was observed according to socio-demographic characteristics.

Male graduates earned NRs. 18,742 while female graduates earned NRs. 11,547 per month after graduation. The income of males was 1.6 times higher than that of females after graduation. The difference in

mean income after TVET graduations was higher among males (16,373) than females (10,470). The income of males was 2.2 times higher than that of females before starting the TVET. However, the income of males was 1.6 times higher than the income of females after TVET graduation. Thus, TVET has the capacity not only to increase income but also to reduce inequality between males and females.

Table 4*Mean Estimation of Income by Sex of the Graduates*

| | Number of observation = 1,231 | | | |
|---|-------------------------------|-----------|----------------------|----------|
| | Mean | Std. err. | [95% conf. interval] | |
| Before Graduation | | | | |
| Male | 2369.801 | 313.4011 | 1754.941 | 2984.661 |
| Female | 1076.896 | 203.7053 | 677.248 | 1476.545 |
| Times | 2.20 | | | |
| The income of males was 2.2 times higher than the income of females before graduation | | | | |
| Current Income | | | | |
| Male | 18742.34 | 887.8182 | 17000.53 | 20484.14 |
| Female | 11547.14 | 726.701 | 10121.43 | 12972.85 |
| Times | 1.64 | | | |
| The income of males was 1.6 times higher than the income of females before starting the income. | | | | |

The income differences can be seen by province. The diagram shows that income has increased and it has changed regional

patterns. Current income is higher among the graduates who were from Lumbini Province (21427), followed by Province-1 (20396).

Figure 4

Comparison of Income by Province

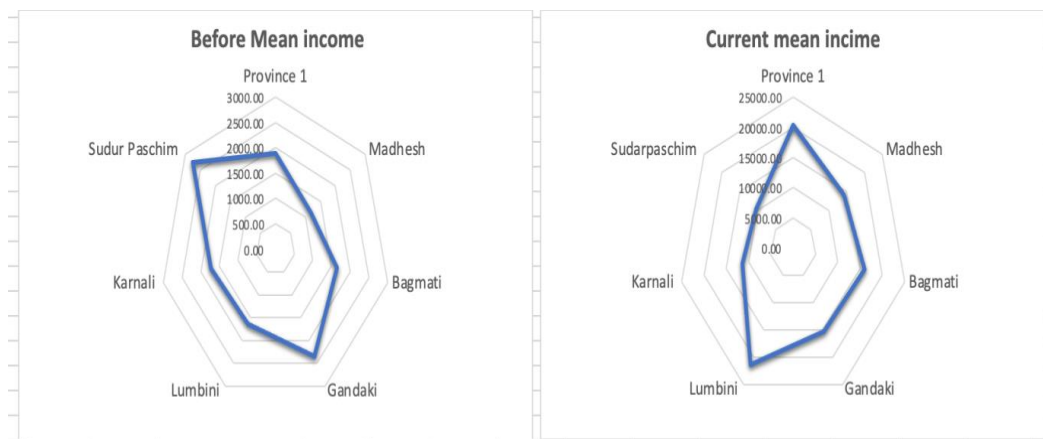


Table 5

Comparing Previous and Current Income by Provinces

| Before Income | Before Mean income | Std. err. | [95% conf. interval] | |
|----------------|---------------------|-----------|----------------------|----------|
| Province 1 | 1882.92 | 928.0921 | 62.10125 | 3703.739 |
| Madhesh | 1170.00 | 466.813 | 254.1622 | 2085.838 |
| Bagmati | 1649.94 | 380.0939 | 904.2365 | 2395.645 |
| Gandaki | 2354.72 | 837.0285 | 712.5553 | 3996.879 |
| Lumbini | 1645.62 | 355.121 | 948.9086 | 2342.329 |
| Karnali | 1721.60 | 521.4558 | 698.5588 | 2744.641 |
| Sudurpaschim | 2754.26 | 659.0734 | 1461.226 | 4047.29 |
| Current income | Current mean income | Std. err. | [95% conf. interval] | |
| Province 1 | 20396.85 | 2823.331 | 14857.77 | 25935.93 |
| Madhesh | 14155.75 | 1054.255 | 12087.41 | 16224.09 |
| Bagmati | 16093.50 | 1326.259 | 13491.52 | 18695.48 |
| Gandaki | 15400.94 | 1467.519 | 12521.83 | 18280.06 |
| Lumbini | 21427.87 | 1824.573 | 17848.26 | 25007.49 |
| Karnali | 11412.88 | 1119.855 | 9215.848 | 13609.92 |
| Sudurpaschim | 10369.26 | 1066.782 | 8276.35 | 12462.18 |

Income has increased in all castes/ethnicity, but no change in patterns.

Figure 5

Comparison of Income by Ethnicity

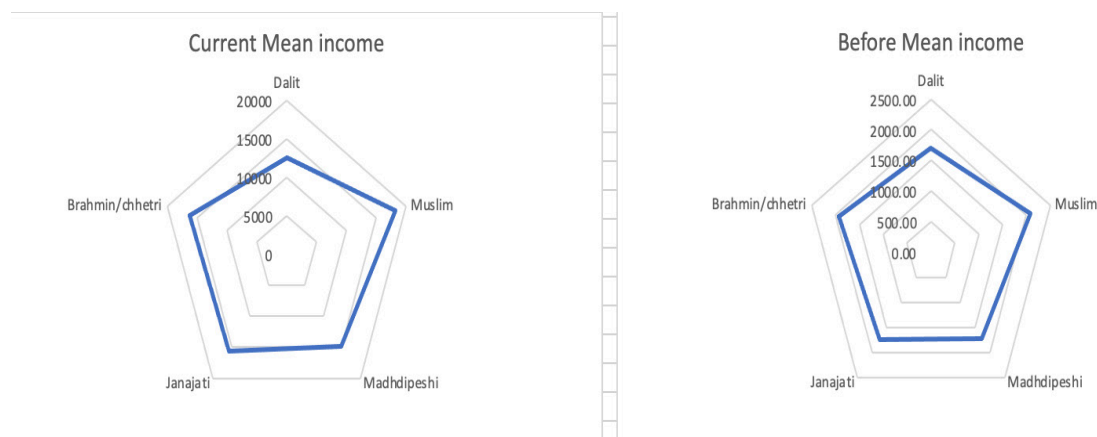


Table 6

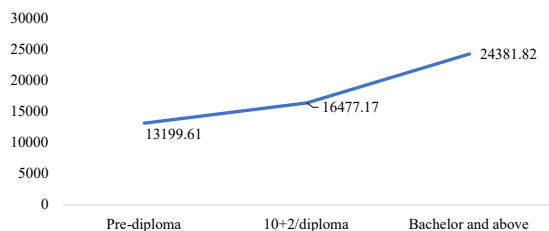
Comparing Previous and Current Income by Caste

| Number of observation = 1,231 | | | | |
|-------------------------------|-----------------------------|------------------|-----------------------------|----------|
| | Previous Mean income | Std. err. | [95% conf. interval] | |
| Dalit | 1706.82 | 852.8822 | 33.55869 | 3380.088 |
| Muslim | 2080.00 | 2080 | -2000.74 | 6160.741 |
| Madheshi | 1734.51 | 697.6927 | 365.709 | 3103.308 |
| Janajati | 1738.63 | 348.3092 | 1055.28 | 2421.972 |
| Brahmin/Chhetri | 1924.11 | 262.9866 | 1408.162 | 2440.066 |
| | Current Mean income | Std. err. | [95% conf. interval] | |
| Dalit | 12501.47 | 1680.396 | 9204.712 | 15798.23 |
| Muslim | 18178.89 | 5856.246 | 6689.553 | 29668.23 |
| Madheshi | 14814.69 | 1651.316 | 11574.98 | 18054.4 |
| Janajati | 15658.09 | 972.3187 | 13750.5 | 17565.68 |
| Brahmin/Chhetri | 16309.96 | 889.1938 | 14565.46 | 18054.47 |

The mean income varied with the education level. Mean monthly income was NRs. 13,199 among the Pre-Diploma graduates, NRs. 16,477 among 10+2/Diploma graduates, and

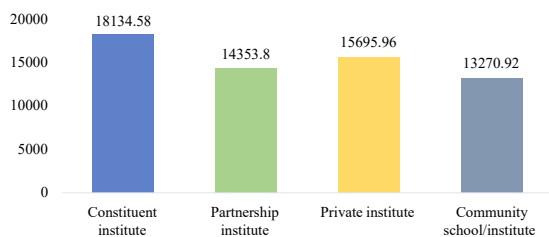
24381 among Bachelor and above graduates. The current mean income also indicates the quality of education perceived by the market or society.

Figure 6
Current Mean Income by Education



Mean income also varied with the type of institution. Mean income is higher among those who have graduated from constituent institutes than other institutes.

Figure 7
Current Mean Income by Institutions



Discussion

The impact assessment of TEVT programs is a nationally representative study carried out in 21 districts, covering all the provinces. The study revealed that overall, TVET positively impacts society's economy through increased employment opportunities among youths. TEVT programs have made technical education and training opportunities accessible to many people. The programs were designed based on community needs and market demand. It has addressed the needs, issues, and priorities of trainees. It has been more relevant in rural areas where people cannot afford expensive education and need employment opportunities at a very

young age to support their households for livelihood. Nearly four-fifths of graduates stated that their present/last job was related to their area of specialization, and more than three-fourths among them also mentioned that it was very highly/highly applicable, further elaborating its relevancy. However, curriculum revision is required in many areas to make it more relevant to contemporary society. It has been producing maximum output with minimal cost. Cost-effective measures such as "*learn, earn and pay*" have been implemented in various agriculture-related institutions. However, this program still needs to be more effective.

There are several other reviews and studies on TVET programs, its achievements and gaps in Nepal. The annual review of TVET program 2020 shows although there is a demand forecast at the institutional level through TNA and other research projects, there are no actual data accessible at the national level to develop programs. In spite of having several conversations with business and industry regarding the need for qualified human resources, no formal actions, such as signing MoUs, have been taken as of date. There is no national demand prediction, but by creating the means to know about demand, the need for skilled labor in business and industry is being gathered while preparing TVET curriculum.

Similarly, the current TVET policy does not call for any coordinated financial efforts. The money allotted to TVET programs is insufficient; yet, projects (NSTB, CTEVT, TITI) had budgets but they were not used because of COVID-19. Guidelines are produced for revenue creation at 45 institutions. There are units to raise money for

schools. Some sources of sustainable finance include students' test fees and donor funding for short-term vocational training programs; however, these initiatives are modest in scope. A significant amount of cash has been set aside for the TVET sub-sector, but CTEVT, which is a required agency, receives less money for the expansion of TVET as a whole because there is no one-door funding system (Sharma et al., 2021).

Moreover, the study named 'issues and relevancy of TVET programs' (Neupane, 2020) stated that Nepal's TVET sector made impressive strides by expanding its TVET institutes and programs. Since that time, TVET institutions have grown at an average yearly rate of 43.34%. Additionally, 83.4% of the local level currently have institutional access to TVET. Although increasing the number of TVET programs and institutes is vital to expand access, it is insufficient on its own. To achieve the desired results, equitable access to TVET programs is essential. Hence, attention should be paid to ensure that the growth is fair in every region of the nation.

Conclusion and Recommendations

TVET has been effective in generating employment for many young people, ultimately contributing to uplift the family's economic status and ensure quality life. The proportion of employed people has increased remarkably after obtaining TVET training, and nearly two-fifths were promoted due to the training. However, there are inadequate linkages between BIAs and educational/training institutes, limiting the opportunities for graduates. Likewise, some demand-side stakeholders also showed immense dissatisfaction towards the graduates and recommended more practical

approaches like internships. Nevertheless, the good aspect is that most graduates were willing to attend further training, and many had a positive perception of TVET. It is encouraging to note that an overwhelming majority of respondents strongly agreed that unlike conventional education, TVET has the prospect of stimulating technological progress for national development. Hence, TVET has a significant positive impact on the life of young people and, ultimately, on society. Moreover, it would be better to conduct a comprehensive study to identify the current skill gaps in the Nepalese workforce and the industries that require skilled professionals.

Acknowledgments

This article is part of the study conducted for the CTEVT. We thank the CTEVT for providing research grants for this study. We want to thank the management and staff of all institutes and participants for allowing us to conduct this study.

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Article

Globalization, Global Political Economy and Technical and Vocational Education and Training: A Nexus

Sabitri Devi Acharya (Adhikari)*^a

^aTri-Chandra Multiple Campus

Abstract

The paper explores the understanding of globalization, global political economy, and their relation with Technical and Vocational Education and Training (TVET) by utilizing the critical discourse analysis method as suggested by Fairclough. Several themes, such as globalization, global political economy, political ideology, national and international labor market, TVET policy, and curriculum for skill development are identified and tried to make connections among them. The findings indicate that globalization and global political economy influence the national economic policy and demand for and supply of labor-related policy. Nepal is a major labor-sending country for foreign employment. Supply of labor is directly related to TVET. TVET has been contributing to the preparation of basic- and mid-level human capital. It indicates the production of semi-skilled human resources for the low-paid international labor market. There are many other issues, including occupation risk, exploitation, working condition, and social and cultural relations in the context of the international labor market. Current TVET policy and curriculum are not sufficient to address these problems.

Keywords: TVET policy, internationalism, foreign employment, liberalization

Introduction

Globalization has been the most outstanding characteristic of the global economy. The end of the Cold War in 1990 provided a necessary political condition for the creation of a global economy. Economic, political, and technological developments are the driving forces behind economic globalization. National policies and domestic economies are the principal determinants of economic affairs. The functions of the global economy are determined by both markets and the policies of nations. Therefore, policies related to Technical and Vocational Education and Training (TVET) are not free

from the effects of globalization. The choice of the trained labor force has expanded from national to international. The TVET policy of 2007 aimed at preparing migrant workers for potential jobs (Ministry of Education, 2007). Challenges emerged due to the implications of globalization for TVET curriculum design, demand for and supply of skilled labor, and choices of skilled labor to work for the national and international market. The interaction between international political and economic forces produces a new field of study that is known as global political economy. Both political and economic

*Corresponding author. Email: sabitri_adhikari@yahoo.com

analyses are required to understand the actual functioning and impact of the global economy on national policy, particularly related to TVET policy and labor market. It creates new challenges, for example, one of the objectives of national policy is to alleviate poverty through the development of skilled human resources for the country; however, at the same time, it requires to develop skills for global economic competitiveness. This paper, therefore, explores the understanding of globalization, global political economy, and their relation with TVET.

This paper is organized as follows: the following section discusses the data and methods adopted for this paper. After discussing globalization and political economy, the next section focuses on implications and challenges for TVET policy and outcomes due to changes in interdependence in the country. The final section of the paper incorporates concluding remarks.

Data and Methods

This review-based paper explores the implication of globalization and the global economy on national TVET policy and labor market. The paper is particularly based on the review of related documents published by international agencies and articles published in the international journals to understand globalization and political economy. Similarly, it reviews the TVET policy documents, including Council for Technical Education and Vocational Training Act, 1988; TVET Skill Development Policy 2007; Technical and Vocational Education and Training Policy, 2012; National Educational Policy, 2019; among others.

Arguments or logic to justify the implication of globalization and global political economy on TVET policy and labor market were collected from published documents by the governments, CTEVT, and international agencies.

The methodological perspective of critical discourse analysis, as suggested by Fairclough (1995, 2003) has been applied to understand complex social phenomena and context. Social research themes include globalization, global political economy, domestic policy particularly related to TVET, demand for skilled labor, national interest, international competitiveness, and choice of labor among others. Globalization and global economy influence national economy and domestic policy through economic variables and political ideology. After influencing the national economy, there will be changes in demand for and supply of services, production, input such as capital and labor. These changes demand a new policy related to TVET. Political ideology determines the economic policy of a country. For example, liberalization is an economic policy that encourages to introduction of new policy for outmigration for searching jobs and labor market. Therefore, identified research themes are interconnected and this concept is applied to describe the paper.

Global Economy

Global economy indicates the capacity of creating a better or cheaper product, improve the efficiency of a key process, access a new pool of resources, or serve a new market (Siebert, 2007). It expands and deepens economic theory as well as other scientific fields. The global economy not only focuses

on the exchange of capital, goods, and services across international borders but it is also a mechanism to bring about prosperity. The global economy encourages the growth of economic activities through effective global leadership, global mindset, and global entrepreneurship. Now, the global idea emerged in economic philosophy and a new stage of economics and world development. The world economy is becoming more global. The segmentation of markets is being reduced. Many catalysts are at work for globalization (Siebert, 2007).

In addition to this, the global economy indicates many fragmented economies integrated into one economy that is a mechanism to change the use of factors production, production level and trade. Rapid changes can be seen in the global economy. Barriers to the free flow of goods, services, and capital have been reduced. The volume of cross-border trade and investment has been growing more rapidly than the global output, indicating that national economies are becoming more closely integrated into a single, interdependent, global economic system (Hill and Jain, 2008). Declining trade and investment barriers and technological change are primary drivers toward greater globalization. The process of interaction and integration among people and the economies of different nations, results in social life is organized on a global scale (Keengwe et al, 2016). The move toward a global economy has been further strengthened by the widespread adoption of liberal economic policies by the countries including Nepal.

The process of economic integration has played an important role in fostering economic relations among nations across

the world. Economic cooperation with other nations is strategically important for the growth of the economy. International economic relations play an important role in the growth of the global economy. The level of global economic integration is now higher than before. It means globalization increases the size of the global economy.

In the globalized era, interdependence among the markets is increased; however, the global economy does not centralize the decision-making process. Decision-making process in the global economy has found a decentralized way (Heywood, 2011). Globalization and internationalization have different meaning. Internationalization describes the importance of international relations, cooperation on treaties alliances among nations; however, globalization specifies the global economic integration of national or regional economies into one global economy and focuses on the speed of economic integration. After having the concept and implications of the global economy, we need to discuss globalization.

Globalization

Globalization specifies a process or set of processes that highlight the dynamics of transformation or change (Heywood, 2011). It indicates an interconnected and interdependent world with free transfer of capital, goods, and services across national frontiers. It argues for the trend toward a more integrated global economic system. The globalization of the economy means reducing market segmentations and the increasing interdependence of regional or national markets (Steger, 2009). Resulting national markets are more dependent on each other. The process of globalization ensures the

integration of individual national economies with the global economy. Globalization is the process of making integration among economies across the globe in many aspects, including the movement of products, capital, labor, managerial techniques, views, ideas and culture, among others (Mussa, 2000).

Globalization increases the flow and interconnectedness of goods, information, things, people, trade, values, culture, and media (Keengwe et al, 2016). Therefore, globalization indicates a set of processes leading to the integration of economic, cultural, political, and social systems across geographical boundaries.

Due to increasing interdependency, every country in the world is affected by what happens in other countries. Changing in the level of import and export of goods and services in an economy, for example, the Chinese economy affects other nations. Production and trading of goods and services affect the business, consumers and government agencies, among others. Political events or political decisions, such as creating some barriers to another country, or playing the role in favor of another country also affects the global economy. The trade policies of countries that encourage or restrict the growth of exports and imports of goods and services have wide-ranging effects on other countries. International politics affect global economic activities. The intention of international politics creates positive and negative effects on the economies. The global economy increases the total production and consumption of goods and services and the standard of living of the people, and lowers the transaction costs and production costs and prices of goods and services (Siebert,

2007). Therefore, trade that includes imports and exports is the most important factor in the global economy. Exports and imports influence the gross domestic product, investment, and employment of the economy.

Global Politics and Political Ideology

The functioning of the world economy is determined by both markets and the policies of nation-states. Economic factors have an important role in determining the character of the global economy, at the same time; political factors are of equal, and perhaps greater, importance. Therefore, both political and economic analyses are required to understand the actual functioning and evolution of the global economy. Markets of goods, labor, and capital are increasingly interconnected across borders with important political implications. It is important to understand the dynamics shaping the global economy and global politics. Global politics indicates the politics at global level. There is no doubt that the global or worldwide dimension of the economy has, in recent years, become more significant.

The interaction of politics and economics produces a new subject for theoretical research and applied policy analysis. Cross-fertilization between politics and economic approaches produces different analytical frameworks. As deregulation and other reforms have reduced the role of the state in the economy, many believe that markets have become the most important mechanism determining both domestic and international economic and even political affairs.

Relationships and interactions between political and economic forces are found

at the national, international, and global levels. Global political economy can be seen as a marriage between political science and economics at the global level. Global political economy is concerned with the study of global problems and issues related to politics and the economy.

From the mainstream perspectives, global politics are realism and liberalism. Realism is a theory based on power politics. National interest is key to the realism theory of global politics. Realists believe that nations are necessarily self-seeking and global politics are designed in terms of what the nation can gain. Universal moral principles do not guide national behavior. International politics tries to answer how this policy affects the power of the nation (Heywood 2011). Liberal theories about interdependence are grounded in ideas about trade and economic relations. Nations can work together to maximize prosperity and minimize conflict.

Liberalism plays a dominant ideological role in shaping western political thought. It indicates western civilization (Heywood 2011). Liberal theories primarily are grounded in the ideas of trade and economic relations. The central theme of liberalism is balanced among competing interests. It is shown in the economic theory of market equilibrium. This concept applies in the global market as well. After the World War II, liberal ideas and theories had a considerable impact on the discipline of international relations because it adopts a market-based approach or neoliberalism. After the end of the cold war, liberalization gained momentum and is supported by a new wave of democratization in the 1990s. Washington Consensus prescribed a set of 10

economic policies, such as macroeconomic stabilization, economic opening concerning both trade and investment, and the expansion of market forces within the domestic economy accelerated liberalization and changed the rules of the global political economy (Saad-Filho, 2010).

The functions of nations have changed due to changes in the rules of global political economy. The market mechanism applies in the global market; however, politics is based on the national level. National politics can not handle global issues. The national government will not work under the globalization rules because globalization undermines state sovereignty; however, the national government can not keep their citizen away from globalization. To address this challenge, a new concept in global political economy is required to design with both: realism and liberalism characteristics.

A way to facilitate cooperation among nations is to establish international regimes. The central idea is 'cooperation'. Cooperation requires compromise and is possible when there is conflict. Cooperation is possible through international regimes and institutions (Mitchell, 2006). Regimes can be defined as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors expectations converge in a given area of international relations. Liberal internationalism theory of politics seems to be fitted rightly in the present context. Liberal internationalism is the theory of politics based on cooperation between nations (Heywood, 2011). Internationalism agrees with realism that nations are rational-unitary actors. It is realized that anarchy leads to competition and conflict, but that problems can be

managed through international institutions. This reduces the fear that the nation is being exploited by other members of the regime and minimizes the chance of misunderstanding. The rationale of this theory is to focus on long-term benefits to the nations instead of short-term goals. By institutionalizing cooperation, regimes can reduce the cost of future agreements. By reducing the cost of reaching an agreement, regimes increase the likelihood of future cooperation. Liberal institutionalization norms provide a basis for cooperation and reform of the international system at large (Jahn, 2013). Integrating liberal norms into the legal and institutional structure of the international system can establish a new international regime as required. Liberal internationalism has built a positive approach to international organizations in order to practice the theory of neoliberal institutionalism.

There are some criticisms about the practices of liberal internationalism. Priorities were given to produce evidence only from the developed countries of the world, particularly the Europe. International organizations are requested to solve the problems of incomplete information, transaction costs, and other barriers to welfare improvement for their members. However, these organizations are bureaucracies and bureaucracies are distinctive social form that exercises authority in particular ways. They use their authority to both regulate and constitute the world (Barnett & Finnemore, 2004).

As discussed above, global economy, globalization, global politics, and political ideology are interconnected and determine much the national economic policy, flow of goods and services, of labor and capital, and the competitiveness of the country. All these

activities influence the demand for and supply of labor market in the country. Particularly low-income countries, like Nepal, supply the labor to relatively advanced countries. In low-income countries, such as Nepal, the lack of job opportunities at home and the potential for higher earnings abroad are the pushing factors for outmigration. Many migrants choose to migrate to seek improved economic opportunities (IOM, 2019). A report published by the National Planning Commission shows that a large number of Nepali migrant workers residing outside the country is spread over 125 countries (NPC, 2020). According to recent census data, a total of 2.2 million Nepalis are abroad (CBS, 2022). The population migrating out of Nepal is relatively young, which is around the age of 25-35 years. An analysis of the relationship between migration and TVET is therefore needed to enhance the role that TVET can play in mitigating the causes and tackling the effects of migration.

TVET Policy and Labor Market

Although a large number of young people are out-migrated to find jobs, most of the economic policy-related documents give high priority to generating employment. The general objective of the policy documents is to expand the supply of skilled and employable labor by increasing access to quality training programs, and by strengthening the TVET system in the country. TVET is treated as an instrument to increase the employment rate in the country (NPC, 2019). A critical examination of policy documents related to TVET shows that policies toward inclusive ethnic diversity generate income through the development of skills, empowering the excluded and marginalized community. For

example, the School Sector Reform Plan (SSRP) 2009-2015 gives policy directions to increase opportunities for TVET to the disadvantaged students through the development of various program delivery modalities (MOE, 2009). National Foundation for Indigenous Nationalities is working to provide employment-oriented skill development and entrepreneurship training for the promotion of traditional professions and to preserve and promote the unique culture of Adivasi Janajati (MOF, 2022). The government attaches high importance on vocational education and training because of the vital role it plays in the social and economic progress of the nation. Skill-based and vocational training is being carried out on cost sharing basis among federal, provincial, and local levels for the development of skilled and quality human resources to balance the supply and demand of human resources (MOF, 2022).

Policy documents, including the 15th Plan of Nepal recognize that TVET is a key instrument in maintaining and improving both enterprise and national competitiveness (NPC, 2019). The plan has mentioned supplying skilled labor in the international labor market to increase the remittances for the country because most of the unskilled labor is out-migrated to find a job in the international market. The curriculum has been designed and updated to meet the demand of labor market. It is not only on the supply of skilled human resources for the country, but also the skill tests of unemployed youths done. Similarly, the provision of skill tests on those returned from foreign employment indicates the impact of globalization.

The TVET policy of 2007 aimed at preparing migrant workers for potential jobs but the training and skill development programs designed by TVET institutions in Nepal did not match the skills required in the labor markets of destination countries.

Conclusion

The functioning of the world economy is determined by both markets and the policies of nation-states. Economic and technological forces shape the policies and interests of an individual nation and the political relations among nations. Nations cannot afford to ignore the effects of globalization or increasing integration and interdependence of national economies. Nations should make efforts to get benefits from the globalization and global economy. There is a strong connection between out-migration and globalization or the global economy.

TVET provides practical skills, attitudes, understanding, and knowledge relating to occupations in various sectors of economic and social life; however, the same curriculum of TVET may not work to develop the skills required for national and international labor markets. One of the challenges for TVET due to globalization is how to design for TVET curriculum for both markets. Indigenous knowledge systems may be more important for the country; however, they may not work outside the country. There are many other issues for example, health and well-being, risk and exploitation, and social relations that are connected with out-migration and TVET. Current policies related to TVET are not sufficient to address these issues.

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Article

Effectiveness of Vocational Training on Light Vehicle Mechanics in Underprivileged Children's Educational Programs, Nepal

Ishwor Rimal^{*a}

^aCouncil for Technical Education and Vocational Training (CTEVT)

Abstract

Training effectiveness is important for the employment of technical and vocational education and training (TVET) school graduates, such as light vehicle mechanics in the automobile industry. This study explored the training effectiveness of light vehicle mechanics in Nepal, with focus on students' satisfaction with TVET school's physical facilities and physical environment. The training effectiveness is explored among the sampled TVET graduates of a CTEVT affiliated school, using quantitative method of research. The overall impression of the training was effective because the graduates responded positively about training. The school did not fully achieve the objectives due to inadequate provision of modern technology. Thus, they pointed out the need for regular up-to-date tools and equipment as per need of the industry. Utilization of library facility and technology in the teaching- learning methods was equally needed. The skill mismatch could be solved by linking industry to the TVET training. This study may draw an interest of the TVET school leaders for taking effective measures to maintain quality of graduates, keeping in mind the industry needs. Similarly, future researchers may take reference when they want to explore the underlying causes of students' satisfaction with physical facility and school environment, as well as training and skill mismatch in the labor market among the TVET school graduates.

Keywords: effectiveness, satisfaction, physical facility, physical environment

Introduction

The technical and vocational education and training (TVET) focuses on labor market consumable output of the graduates from TVET institutes. The UNESCO (2001) defines TVET as:

all forms and levels of educational process involving, in addition to general knowledge, the study of technologies and related sciences and the acquisition of practical skills, know-how, attitudes and

understanding relating to occupations in the various sectors of economic and social life. (p.7)

The TVET focuses on employability skills. The TVET plays a major role in skilling young persons for the world of work (Kintu et al., 2019). The human resources working in the industry are crucial. They are end product graduates from TVET institutes for the labor market. In this regard, skill of

*Corresponding author. Email: rimalishwor@gmail.com

TVET schools' graduates is significant for industry as well as economic development of the country. As labor market prioritizes increased productivity of the industry, it always seeks employability skills rather than medium of the skills acquisition of the individual- either formal, informal or non-formal.

The TVET system in Nepal had aimed to grow fast and make a significant contribution to the Nepali labor market by supplying skilled human resources. The Council for Technical Education and Vocational Training (CTEVT) is the apex body for production and quality control of basic and middle level skilled technical and vocational human resources in Nepal (CTEVT Act, 1989). There are 1,370 short term skill/ vocational training provider institutes affiliated to CTEVT for the conduct of short courses (CTEVT, 2022).

According to Karemera et al. (2013), the environmental difference and the difference in the quality of instruction from one school to another can as well create differences in the level of knowledge acquisition of the student. This implied that the learning facilities in the school will expose the student to learning environment which can affect their academic performance. Therefore, there is no doubt that the school environment contributes to student's academic performance which is usually measured in terms of cognitive, psychomotor and affective achievement (Akaninwor, 2016). If the physical resources are good then quality output as a trained graduate are available in the job market.

All the discussion above relates to the effect of physical resources on the vocational training. The adequate provision of relevant tools, workshop equipment and facilities helps to

a large extent to improve students' practical skills and their academic performance. The workshop equipment, physical facilities, physical environment, library facilities and administrative delivery have influence on psychomotor skills of the graduates. This is the link with the effectiveness of the physical resources on the vocational education and future performance in job as well as economic life.

The research is based on the evaluation of CTEVT affiliated training institute. How people are benefited with reference to physical resources of the institutes? It is to verify progress towards achieving objectives of short courses as a help of school physical facility and school physical environment to gain competency improvement conditions of underprivileged adults, and determine the effectiveness of short course programs intern of skill and employment as well as earning with reference to physical resources available in the training institute.

School Physical Facilities

According to the CTEVT Program Evaluation Form (2075), physical facilities refer the class room size (minimum 0.75 sq.m. per student), provision for natural or artificial lighting/ ventilation in the class room, appropriate condition and numbers of furniture and white/black board, neatness and cleanness of class room, and at least two class room with multimedia. It further mentions library space of minimum 40 meter square program and additional 15 meter square for each additional program, book and student ratio of 1:2 per subject, availability of reference book 1:10, and the library remains open during off hour too.

School Environment

According to Ndirangu and Udoto (2011), the quality of the library, online resources and lecture facilities provided by Kenyan public universities did not meet quality measures of adequacy. Those universities were unable to support the desired educational programs effectively and facilitate the development of learning environments that support students and teachers in achieving their goals; and the facilities were the antithesis of healthy and secure facilities that can provide a stimulating/inspirational setting for the users.

Dewey (1926) writes, 'Education is a continuous process of experiencing and of revising or non-revising experiences. It is the development of all those capacities in the individual, which enables him to control his environment and fulfill his possibilities' (as cited in Singh, 2007, p. 22). A good and sufficient environment is necessary for a learning. The home and the school both should provide necessary stimulus for learning experience. The student, who spend most of time in school and school environment, is exerting influence on performance through curriculum, teaching technology and relationship with colleague and teacher in the school environment.

Students Satisfaction

A student's satisfaction plays a major role on his/her performance. Students' satisfaction as a short term attitude results from an evaluation of a students' educational experiences (Elliott & Healy, 2001). Students' satisfaction is a multiple dimension process which is affected by different factors. Wilkins et al. (2012) identified quality of lecturers, quality of physical facilities

and effective use of technology as key determinant factors. Student satisfaction is greatly influenced by quality of class room, quality of feedback, lecturer-student relationship, and interaction with fellow students, course content, available learning equipment, library facilities and learning materials. In addition to that, teaching ability, flexible curriculum, university status and prestige, independence, caring of faculty, student growth and development, student centeredness, campus climate, institutional effectiveness and social conditions have been identified as major determinants of student satisfaction in education.

Skill and Employment

The graduates in TVET education and their employability are the main pillars of economic activities to contribute to the development of any country. They are characterized by a set of achievements, skills, and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations (Holmes, 2013). In the technological changes or dynamic job market, employment of graduates is directly related with the demand of the labour market or industry. Employer surveys indicate that occupation-specific skills are no longer sufficient for graduates to meet the needs of national labor markets (OECD, 2013). In this regard, skilled employees are highly demanded in the labor market. It could be possible only after the course are designed and conducted in line with the need of job market.

Methodology

Formally, TVET in Nepal is a gateway for education and training through CTEVT routes

and informal skills acknowledged through recognition of prior learning (Skill Testing) in alternative way (CTEVT Act, 1989). According to the CTEVT Skill Mapping (2020), the CTEVT and different ministries in the sector of technical education involve in providing the certification of technical education. The trained human resource efficiency can be evaluated how they are employed and their training is effective in the job market.

To examine the outcome gaps, the study dwelt on the perceptions of a sampling of CTEVT short course trainees who had completed their course under the CTEVT. Additionally, the study observed the effectiveness of short course the technical graduates received with technical training from the institutes providing it. To determine the effectiveness, this study was limited to Kathmandu Valley - only one technical institute with 33 graduates for the survey study research. To study the effectiveness of short course of light vehicle mechanic, the data were taken from currently graduated and those working in the automobile industry. This assist the researcher to examine the effectiveness of the short course provided by the technical training provider.

The researcher conducted quantitative research to determine effectiveness of training along with the effectiveness of physical facility, students' satisfaction and school environments of training institutes by applying structured questionnaire to the respondents. Descriptive research methodology was used to collect primary data. The evaluation research was conducted only in the organization called Underprivileged Children's Education

Programs (UCEP), Nepal, Sanothami, Bhaktapur. The automobile occupation is focused, for the institute is a pioneering one for the short courses and currently has working graduates. The research draws the knowledge of physical facility, students' satisfaction and physical environment of the training.

Results

There were many short courses run by the UCEP for social benefit. The physical resources were means for uplifting socially backward people. The light vehicle mechanic was one of the occupations for the socially disadvantaged people, aiming at ensuring their prosperous life.

The Table 1 shows that among 33 respondents of the light vehicle mechanic, 63.6 percent were from Bagmati Province and 36.4 percent were from Sudur Paschim Province. The institute is located in the Kathmandu valley with full physical resources. The majority of students were from the Bagmati province.

Table 1
Province-wise Graduates

| Province | Frequency | Percent |
|--------------|-----------|---------|
| Bagmati | 21 | 63.6 |
| Sudurpaschim | 12 | 36.4 |
| Total | 33 | 100 |

Among the study participants, 90.9% of the graduates were male and 9.1% were female.

The study reveals that 90.90% graduates were satisfied with the class room facility, workshop facility, lighting and ventilation of the premises. Similarly, 81.8% were satisfied

with the physical layout of the institute. The 72.7% of graduates were satisfied with the safety measures.

Similarly, 45.5% students were satisfied with the library facility. They were fully satisfied with the administrative facility, open space, adequate hostel, separate toilet for male and female, and enough parking space.

About 82% were satisfied on the utilization of classroom and workshop facilities. More than 80% of the trainees gave positive responses regarding the workshop equipment, relevant equipment for course, equipment for individual practice.

Discussion

This study showed that 63.6 percent light vehicle mechanic graduates were from Bagmati Province. The CTEVT Skill Mapping (2020) showed that 30.6% of total enrollment capacity in Nepal belongs to Bagmati Province in case of vocational education or skill training. The enrollment capacity as well as the federal capital of Nepal belongs to the Kathmandu Valley, so there was higher number of participants from Bagmati Province. This study also showed that more than 90% of graduate were male. Report on Impact Evaluation-Study of the CTEVT/NSTB graduates in Bagmat Province showed 84% male were in engineering occupation (CTEVT BPO, 2022). This study and the given study report from CTEVT BPO were similar on higher number of participation in engineering sectors. In this regard, whether engineering occupation is a male-friendly can be a matter of further study.

Satisfaction with Physical Facilities

The study showed that majority of graduates were satisfied with the classroom facility, workshop facility, lighting and ventilation of the premises, physical layout of the institute, safety measures in the institute. Similarly, they were happy with the students' services, and building and services provided by institute. Likewise, physical resource plays a significant role for the learning situation of the students. The support facilities and condition for the graduates in the light vehicle mechanic showed less than half students are satisfied with the library facility. The graduates are fully satisfied with the administrative facility, open space, adequate hostel, separate toilet for male and female. The graduates were satisfied with hygienic drinking water, and the hygienic canteen facility.

Choi et al. (2014) suggested that indoor environmental quality of the classrooms, such as thermal conditions, indoor air quality, acoustic conditions, lighting conditions, furnishings, aesthetics, technology, and view conditions, was associated with positive student outcomes. Hence, the research result and international literature were positive on good school environment, which enhances performance of the students. It further substantiates that school physical facility effects the performance of the students.

Satisfaction with School Environment

The research result shows that majority of the students were satisfied with the utilization of classroom for study. More than two-thirds students were satisfied with the utilization of workshop. The utilization of library was in satisfaction of less than half of the students.

The program was based on skill oriented training. Due to this, less utilization of library facility was as per program nature. Similarly, majority of the students were satisfied with provision of enough, related tools and equipment for individual practice. But, just more than half students were satisfied with response on up-to-date equipment; the majority of students were satisfied with the replacement of equipment as needed with reference to new technology; the majority of students did not get satisfaction with the use of modern technology.

Lyons (2001) summarizes the importance of physical environment to educational achievement by detailing the existing links of the research literature with classroom conditions and learning, which deals with significant effect of classroom environment on concentration levels, listening, and writing. It is supported by research results that have found higher test scores and more positive student outlooks in upgraded learning environments.

Skill and Employment

The study showed that just more than half of the graduates were satisfied and gave positive response on up-to-date equipment. This result showed that the graduates were not applying fully update and current marketable equipment and technology in the training. According to Branka (2016), matching of jobs and skills is the most important issue for employers and individuals. A solid partnership among different stakeholders in skills development is necessary, particularly with the business sector and employers' representatives, employers and training providers mostly articulate their short-term needs, which reflects the reality of labor

and training markets: most employers and training providers simply do not plan for the long-term; the immediate or short-term benefits of skills recognition are their key interests.

This study shows graduates were not practicing in an up-to-date tools and equipment in the training, which leads to skill mismatch. Training was due to not involving employer in the training process, as the international research have showed: the recognition of skill could be achieved only after the participation of both employer and training provider. In order to produce skilled workforce, there should be good coordination between employer and training provider. Income of the individual is affected by the skills they acquired in the training. Highly skilled people gain good income for their work.

Conclusion

The effectiveness of the training on light vehicle mechanic for under privileged adults saw positive response. The training instills people with competence and confidence required for the work. The evaluation of effectiveness of courses relied on satisfaction of trainees and improved skills of trainees as evidenced for their application in their jobs. The institute did not achieve their objectives due to inadequate up-to-date technology. The overall impression of the training was positively responded. However, the responses pointed out the need for regular and timely update of tools and equipment and as per need of the industry, which could solve the skill mismatch.

To make the light vehicle mechanic training effective, the new technology need to be

introduced in the training institutes. It is also to enhance skill as per industry demand.

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Article

Work-based Learning through School Production Unit in Polytechnic Institutes

Harish Singh Thapa^{*a}

^aKathmandu University School of Education

Abstract

Work-based learning (WBL) is a planned activity that integrates learning and work together to develop knowledge and skills for future employment. The study focuses on exploring WBL in the school production unit, which is a part of the school laboratory that works for the production of goods, items, or provision of services. This paper synthesizes, compares and contrasts the approaches of the WBL in production unit with the help of the literature through a systemic literature review.

The production unit in Technical and Vocational Education and Training (TVET) institutes has been found as a contributive factor to experiential learning, active learning employability and entrepreneurship skills, work-based sustainability for students, and increased cooperation/collaboration learning ability of students. These are major applications of the implementation of WBL through school production units in TVET schools. The paper concludes that TVET education institutions anticipate the production-based modality to ensure the sustainability of WBL.

Keywords: work-based learning, school production unit, TVET, decent and sustainable employment

Background

The technical and vocational education and training (TVET) has been practiced in formal, non-formal and informal approaches to education for the acquisition of skills and knowledge for better performance with sustainable employment (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2021). It is one of the important tools for social transformation with equity, inclusion and sustainable development (El-Ashmawi, 2017). The objective of TVET is to prepare a workforce by acquiring knowledge, skills, and abilities

that could enable them for effectively performing their job. Work-based Learning is one of the important learning strategies to fulfill the aim of TVET. In WBL, instructors play a significant role in strengthening learners' soft skills or generic skills, allowing them to gain hard skills like professional and academic skills while working in the workplace (Holzer & Lerman, 2014). Likewise, students are exposed to real work environments and involved in entrepreneurial activities in the workplaces (Hoffman et al., 2016).

^{*}Corresponding author. Email: harish.thapa@kusoed.edu.np

The most common work-based learning programs available in TVET polytechnic institutions to facilitate learners at workplace include field trips, school production units or school business, in-plant training, work shadowing, hospital/community posting (health related subjects), collaborative learning, and industrial apprenticeship (Haruna & Kamin, 2019) in carrying out the task, two main elements are involved; institutes and workplaces. Students receive training in the theory aspect from school and practice in industry. Therefore, relationship between these two elements is essential for the attainment of TVET goals. This study aims to provide a systematic review of published researches on the current practice of Work-based Learning in TVET and to assess the major challenges that affect the relationship between school and workplace with a view to make recommendations for the best practice in future application of WBL in TVET.

WBL has been performed through different activities, such as cooperative work, field trips, internships, industrial apprenticeships and school-based production units. Among all, the school-based production unit has been prevailing as the life changing modality in TVET (Thapa, 2021) because it is also learner-centered learning in which a professional teacher supports learners in their learning activities.

The school-based production units are a branch or department of TVET institutes' practical areas or fields, or lab where learners are involved in either manufacturing of goods as per market needs or providing services to the communities on the basis of their related subjects under the guidance of their

professional teacher (Chukwu et al., 2019) fishery, clothing and textile, catering craft practices, data processing, among others. Contrarily, feed production, salesmanship, cosmetology, leather goods manufacturing and repair, GSM maintenance and repair were not functional at all in all the institutions surveyed. Challenges found to hinder school production/consultancy services of TVET institutions were: lack of organizational vision for productivity. The school-based production unit is a new example of a work based leaning program that expands the interest of learners in TVET, because there is support to improve employability and upgrade skills for decent and sustainable work. It is the area, where manufacturing facilities, production facilities, and sufficient service providing premises as well as sales and distribution facilities must be available as per standard specification to assure learners' acquisition of adequate work skills and make them skillful as per industrial demands before the completion of their degree.

WBL in TVET Institutes

The Council for Technical Education and Vocational Training (CTEVT) is the apex body in the TVET sector in Nepal. CTEVT has a mandate to prepare and develop basic, middle and high-level technical workforce for economic growth and sustainable development (CTEVT, 2021). The main involvement of CTEVT is to formulate policy, maintain quality assurance, develop curriculum, conduct instructional deployment, manage trainings and conduct research activities in TVET. WBL is one of the important learning mechanisms for all types of their program, which include field trips, school production unit or school

business, in-plant training, work shadowing, hospital/community posting (in health trade), collaborative learning, and industrial apprenticeship (CTEVT, 2020).

School production unit is a CTEVT supported program for all technical schools to improve educational relevance by integrating theory in class and practice in the workplace, i.e. in a school-based production unit for manufacturing and producing products with the best creative and motivated production plan and by providing efficient service in school premises. CTEVT issued a directive for the operation of a production unit in a TVET school in 2019 in order to expose learners to the real world or work for the production of a quality skilled workforce through TVET institutes in Nepal. CTEVT reinforces to establish a production unit for its constituent, affiliated and community schools according to their relevant subjects (CTEVT, 2020). A school-based production unit provides not only a work-based learning environment within school premises, but also a chance to earn money for students. This earning with learning helps them get sustainable TVET.

The foundation and running of the school-based manufacturing/service unit in TVET school is relied upon giving on-the-job training for learner and providing them business exercises to support the day-to-day operation of the TVET school so that the learners could be satisfied with the ideas of learn, earn and pay (CTEVT, 2020). The school-based production units are expanding the learners' interest in the specialized and professional training on the grounds that there is support for improving employability abilities and updating competences as per market need.(Yuliana & Hidayat, 2019).

School production units provide students work-based learning opportunities that are similar to those in industry by exposing them to machines and materials and giving them experiences in the workplace (Chukwu, & Omeje, 2017). It is relevant in the Nepalese context, because it can be hard to get real industrial experience long distance to the place of attachment, lack of purposeful establishments, and rejections by industry. Getting the production unit stable can solve these problems. In order to deal with these problems, the goal of the operation is to give students a strong advantage, which is in line with what students want and what they think is best.

In the above context, the paper aims to explore the role of school production units in work-based learning to enhance the skills of learners by developing production-based learning models that are effective and sustainable learning through school production units. My current study answers the research question: How do TVET schools promote work-based learning to enhance learners' skills through school production units in Nepal? I attempted to address this question by using the constructivist approach and capability approaches to TVET.

Methods

In order to gather answers to the above research question, I used systematic review method. It is a review of published literature that addresses a specific research topic by gathering, selecting, and evaluating papers and, where appropriate, summarizing their findings. I gathered relevant literature, keeping in mind the search title and keywords “Work-Based Learning” and “School production unit” from online data source

in Google Scholar, Proquest, Nepjol, and Research4life. In total, 210 research papers, review articles, conference proceedings, and other technical reports were obtained from these open data sources. In the next steps, 40 articles are selected for systemic review, those published after 2010, full text obtainable, and in English language. These inclusion criteria are relevant to my study objectives because most of information were obtained to answer my research question. After compiling literature on the work-based learning and school production areas, I summed up the key findings from the perspective of work-based learning through school production unit.

Results

The findings of this review show that WBL through school production units in a technical and vocational education can be achieved through production-based learning and propose a set of production-based learning steps integrating it into the learning of skills, knowledge, and attitudes. Systemic review shows that production-based learning is important for learners to enhance their work-based experiential learning, active learning, while the entrepreneurs learning skill and knowledge through school-production units. Likewise, the studies unveil that the application of work-based learning through school production units in TVET School has the potential to enhance employability skills, entrepreneurial spirit, creative and innovative abilities of students. It also increases income for sustainability of learning, and is a good platform for enhancing cooperation and collaboration abilities of the learners. What follows now is a detailed analysis of the findings of the studies.

Work-based Experiential Learning

The objective of the school-based production unit in the technical and vocational schools is the achievement of skills through relevant work experience in production-based learning steps. Ananda and Mukhadis (2016) argued that the school production unit is to offer direct working experience and on-the-job training that fosters students' opportunity to apply theoretical knowledge in a real workplace context. According to Chukwu and Omeje (2017), school-based production units are connected with expert professional courses and it is a best platform for alternative of students' industrial work experience. Students receive performance and learning experience through school production by focusing areas of expertise, collaboration, critical thinking, and communicating (Yudiono et al., 2019). Work experience in school production unit enhances the production skills needed in industry and other work situations with sufficient exposure to theory and practice. The school production unit involves learners producing goods and services as a part of their studies under the supervision with professional instructor.

Work-based Active Learning

In school production unit, systematic planned production steps are performed by the instructor to facilitate students' work-based active learning by participating and interacting with skill-based activities to produce a quality product as per market needs (Ganfri, 2013). Likewise, learners must have the ability to work in a team to accomplish shared outcomes (Agustina, 2019) that promote active learning. Production-based learning steps give students the chance to develop critical thinking skills. Active

participation is expected from the student by raising professional queries interrelated to their product, which will be manufactured or produced in school (Ganefri & Hidayat, 2015). These steps start with defining problems, then students conduct discussions with the instructor to ensure common solutions to the problems and set targets for production to be achieved (Agustina, 2019). The production-based learning steps that need to be adopted by the instructors to facilitate their students' learning actively, interactively, and practically. Such an active learning process contributes, as Yudiono et al. (2019) argue, integration of efficacy, feasibility, propriety, and accuracy in school production unit steps meet the expected criteria of 21st century learning skills.

WB Entrepreneurial Skill Learning

School production units lay emphasis on learning models, where students can undertake the production of standard quality goods or services as per business/industrial world and community needs (Yuliana & Hidayat, 2019) as a part of their studies under the supervision of a professional instructor. The school-based production unit assists learners and community investors to fire up and develop their new enterprise through the conveyance of instructive assets for capacity building and strengthening. School production unit facilitate work based learning for students and that it helps them work in working groups and train for teamwork, as well as raise interest in entrepreneurship (Kusumaningrum & Hidayat, 2015). This entrepreneurial interest will foster seriousness among students in the work-based entrepreneurial learning from the school production unit.

The students are trained to think critically, creatively, and confidently to deliver their ideas and explore how they might be able to produce items that will be made into a product plan through the production-based learning (Kusumaningrum et al., 2017). Students are involved in making business plans after making a product. In that step of production-based learning, they get an opportunity to practice entrepreneur activities like price, profit, margin, and competitor party or product. Therefore, with the help of work-based school production, students can develop their work-based entrepreneurialships.

According to Ganefri et al., (2017), learners are trained to think critically, creatively, and boldly to convey ideas so that quality finished products would be made. After framing a product, strategic business plan and marketing are required. These activities will add learner experience and improve their entrepreneurial competences. Through the school production unit, WBL assists students in the transition from classroom learning at polytechnic institutions to work and improve their entrepreneurial spirit by providing opportunities to gain more confidence in their technical subjects. Entrepreneurial spirit prepares one for job creation rather than job searching. School-based production units provide linkages, context, and realization of the learning resources that are not acquired in the classroom.

Employability skills learning

Employability skills are a collection of significant abilities to deliver skilled workers with higher job prospects. Employability skills are multidimensional and has been drawn nearer through various

aspects, for example, soft skills, hard skills (Asonitou, 2015), good communications skills, impressive skills, critical thinking, professional morals, regulatory and general characteristics (Pouratashi & Zamani, 2019). With the help of the school production unit, students get knowledge, technical and generic skills, and develop a positive attitude towards work, while in a school-based production unit, educators can be involved in the advancement of these abilities, which empower students to acquire core generic skills, discipline specific skills, and personal attitude by working in workplaces (Holzer & Lerman, 2014). As a result, young creative, innovative, and talented graduates are attracted to and engaged actively in the production sector, where their potentials is greatly harnessed and more employment opportunities are created

Sustainable Work-based Learning

Production unit is expected to lead TVET institutions toward sustainability through income generation activities, such as selling their products or providing services to communities. School production units can be used as learning sources as well as funding sources in TVET institutes (Pratham & Triyono, 2018). Students can increase their income in cash by selling goods and services provided, commercializing knowledge and skills, etc that could be ploughed back into the system for better production capacity (Chukwu et al., 2019). The practice of production units over time will enable TVET institutions to stand the test of time, become sustainable, and reduce dependency on external resources, thus contributing to the national economy. It adheres to the concept of learn, earn, and pay, and is helpful for

students having poor economic conditions and promoting sustainable TVET for them.

Collaborative Learning

Students work in teams in a school-based production unit to promote work-based learning. They learn collaboratively through their interactions in their group discussions. In the school production unit, students get a chance to interact and boost skills through the incorporation of collaborative and cooperative learning (Ganefri & Hidayat, 2015). The school production unit has a number of attributes that provide a diverse learning environment and prevent students from monotonous lecture-based classroom study. They help students become more active, participatory, and self-motivated. It helps learners improve their problem-solving skills as well as supports them to enhance their collaborative and cooperative capability with stakeholders, which improves decision-making ability and assists them in facing and solving complex problems and maintaining better communication and management (Yalçın et al., 2010). Learners improve their confidence and freedom to work in teams in the world of work by cooperating with each other on a predefined task assigned to their team under the supervision of the instructor. Work-based learning through school production units supports learner to enhance their societal relations and increases their attendance at work by reducing discipline problems in the classroom.

Discussion

This study reviewed empirical studies on work-based learning through school production units; along with their application and challenges. Using school-based production

units is one of the most effective ways of implementing WBL in TVET institutions as part of the constructivist approach. Piaget, Vygotsky, and Dewey were theorists who helped to legitimize the idea that learning and knowledge are constructed through experience and not acquired. The framework of constructivism encourages learners to actively construct and gain knowledge and skills, and reality is gained through a student's experience (Lee & Hannafin, 2016). According to Hedin (2010), important features of constructivist learning are that learners are active participants in the learning process; prior learning serves as the basis for current learning; and interactions lead to further learning and understanding where the focus of learning is on real-world issues rather than abstract concepts. Each of these characteristics provides a basis for work-based learning through the school production unit. In the same vein, Yoders (2014), from the constructive point of view, contends that learners reflect on lived experiences, interpret them, and form generalizations that influence their thoughts and actions. These are also considered impotent attributes in work-based learning in school production units.

According to Nikolova et al. (2013), WBL is responsible for conducting two-dimensional learning practices. The first is interactional, which can be obtained from interaction between students and their instructors. The second is performance-based learning, which can be gained by reflection followed by experimentation in the workplace. In a school-based learning model, there is active involvement of learners in teams under the supervision of their instructor, and they conduct their work to produce products. In this

course, they practice interactional learning by working in teams under the guidance of the instructor. Similarly, according to Kolb (1984), important steps in the learning phase are reflection followed by vigorous experimentation, from which students can also conceptualize and experiment with their learning. Through reflective experimentation, learners enrich their knowledge and skills in school production units. Therefore, WBL from school production units can be viewed as a constructivist approach where knowledge and skills can be constructed through experiences.

Conclusion

From this systematic review, it is concluded that the school production unit is one of the important learning approaches in work-based learning which focuses more on learners in the work places of polytechnics. Students of TVET can enhance their work-based experiential learning, work-based active learning, employability skills, entrepreneurship skills, learning sustainability, and increased cooperation/collaboration learning skills from school production unit. Every polytechnic has the capacity to run at least one production unit according to their trade so as to properly link their learning to the demands of the market and societal needs. A production-based learning in TVET can help students enter the workplace to experience work-based learning, and they will be able to develop their skills, participate actively in learning and maintain good morale.

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Article

Quality Assurance Agenda in Nepali Technical Vocational Education and Training System

Kushmakar Bhatta^{*a}

^aKathmandu University School of Education

Abstract

Quality assurance in TVET is a concept that is concerned with high performance in entire academic process involving activities such as teaching, learning, infrastructure, students' behavior and so on. Good quality education is very necessary in the total development of the student, which ensures proper development, job prospects and the realization of academic goals and objectives. There are varied factors working against the realization of quality TVET. In a competitive labor market, the quality and relevancy of program offerings must be of paramount interest to all technical and vocational institutions. Accredited institutions, qualified teachers and practical partnerships between public and private actors will have an increasingly important role to play in the delivery of TVET programs so that the new graduates from institutions of TEVT must be world class and the education quality must be of global standards. Effective quality assurance policy helps to support the development and maintenance of a good TVET system. This paper attempts to clarify the concept of quality assurance in TVET by discussing the various approaches employed. It presents examples of best practices in quality assurance based on the secondary data, observation, study, and experiences outlines and discusses the relevancy, gap and need in Nepal's TEVT system to meet the requirements for preparing competent and competitive human resources for the world of work.

Keywords: TVET, quality assurance, accreditation, standards, qualifications

Background

Education is a powerful agent of change, and improves health and livelihoods, contributes to social stability, and drives long-term economic growth. Education is also essential to attain all the sustainable development goals (SDGs). Education is the main foundation of modern culture, science and technology spiritual and material production, as well as sustainable development of society. Improving educational quality requires a general theory

of education. The theory of productive education can be created only based on the data of "multi-story measurements" of the performance of subjects of creative activity in different spheres (Kuzmina, 2004). Quality of education is a pre-condition for attractiveness, mobility and trust and considered the way of transition the potential into the real, in which the nature of human life itself is implemented.

^{*}Corresponding author. Email: k2bhatta@gmail.com

Quality education helps people become better citizens, get a better-paid job, shows the difference between good and bad. Here is the couplet by ‘Great Chanakya’, which is always contextual.

विद्या ददाति विनयम् विनयाद् याति पात्रताम् ।

पात्रत्वात् धनमाप्नोति धनात् धर्मं ततः सुखम् ॥

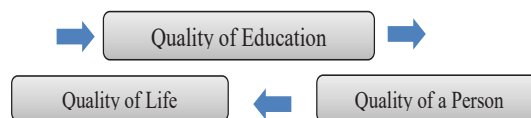
(Education to strengthen skill, knowledge and accomplishing goal of humanity and acquiring real happiness in life)

Education shows us the importance of good work, hard work and, at the same time, helps us grow and develop. Quality education leads an individual toward betterment. Thus, we can shape a better individual, a better society to live in by knowing and respecting rights, laws, and regulations. In the education and training sector quality is important for securing client (employers and learners) and stakeholder (governments and industry) trust in the ability of the system to deliver relevant learning outcomes. This is especially critical as systems become more flexible in what and how educational program/training is delivered and accessed (Pepper, 2016). With learners obtaining qualifications for the knowledge, skills, and competencies they acquire in a range of formality. The effective and efficient regulation of education/training is central to the integrity of TVET systems and to the qualifications they offer and deliver.

At the turn off the 19th and 20th century Rudyard Kipling expressed the prophetic idea that education appears as the greatest creature comfort only if it is of the highest quality otherwise it is useless (Lyskon & Zharinova, 2021). In this regard such key concepts as “Quality of Life”, Quality of a Person and Quality of Education are closely related.

Figure 1

Relation of Quality of Education in Quality of Life



Source: Lyskon and Zharinova, 2021

Technical and Vocational Education and Training (TVET) is historically oriented towards social justice and employment. It has focused on poverty alleviation rather than contribution to the development of a productive workforce and to enterprise-level and national productivity. In a wide sense, TVET is used as a comprehensive term referring to those aspects of the educational process involving in addition to general education, the study of technologies, practical skills, knowledge, and attitudes related to world of work (Maclean & Wilson, 2009). The skills associated with continuously learning and creativity dealing with ambiguity is increasingly becoming important. TVET is also a vital tool for achieving the agenda 2030 development goals. Sustainable Development Goal (SDG) 4 emphasizes the need for inclusive, relevant, and quality education so that the young people should be equipped with skills, knowledge competences and values to break cycles of poverty contributing to socio-economic development.

Ensuring Quality in TVET

TVET sector requires systematic approaches to measure the quality of systems. In some countries traditional systems of inspection continue to be the mechanisms for ensuring that institutions deliver quality training. In

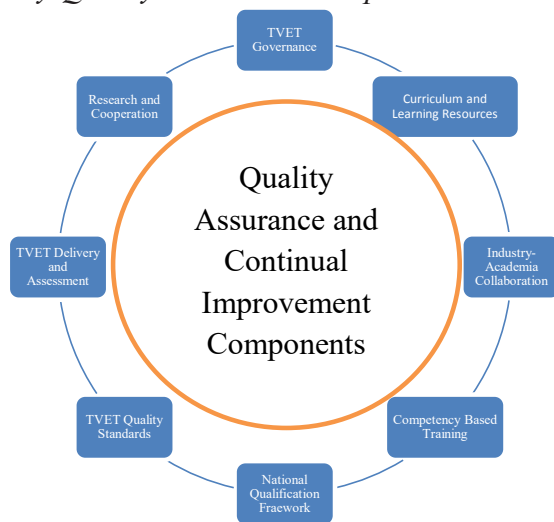
others the application of quality standards (developed by government regulators and commercial quality and accreditation organisations) are used as criteria or benchmarks against which organisations are formally audited, to gain, maintain or renew registration or accreditation. The effective and efficient regulation of education and training is central to the integrity of TVET systems and to the qualifications they offer and deliver.

Effective regulation ensures that the providers of TVET have appropriate and adequate processes and physical and human resources in place to deliver the required and relevant skills and knowledge; it also promotes continuous improvement practices and provides confidence for industry in relation to the skills graduates possess. An efficient and streamlined regulatory system and one not overly burdensome encourages compliance and quality of provision. Efficient regulation is also underpinned by a risk-based approach to quality assurance, which encourages the pursuit of excellence and self-compliance (Misko, 2015). As practiced in different countries, there needs a strong quality assurance and management system which can preserve the integrity of nationally recognized qualifications. Well-recognized and trusted qualifications/accreditation system can support labour market efficiency by providing ‘effective signals’ to the labour market about the knowledge and skills an individual has acquired, which helps employers and graduates to have confidence in the quality of the qualifications.

Assuring the quality and relevance of TVET has become an increasingly challenging task, which must comply with changing labor market’s requirements and needs. National

Figure 2

Key Quality Assurance Components



Source: Kenya TVET QAF-2019

curriculum framework, institutional accreditation system, qualified instructors and partnership with the stakeholders are some of the basic and important areas for quality assurance. TVET requires a national curriculum framework which must cover skills, learning areas based on the national and global community. The curriculum should provide guidance to being and becoming a whole person. A curriculum framework is a supportive structure to help schools to plan and develop their own curriculum. It comprises a set of interlocking components, including essential learning experiences, generic skills, values, attitudes, and key-learning areas. Curriculum framework is one of the most important tools in ensuring consistency and quality in a curriculum system. Institutional accreditation is viewed as both a process and a status. It is a process by which a TVET institution evaluates its operations and programs and seeks an independent judgment to confirm that it

substantially achieves its objectives and is generally equal in quality to comparable institutions or programs. As a status, it is a formal recognition granted by an authorized accrediting agency to an institution or program as possessing certain standards of quality as defined by the accreditation agency (Asia Pacific Accreditation and Certification Commission [APACC], 2020).

An instructor possesses knowledge, skills, attitude, or behavior, which refers to quality. This word quality is regarded as “competence”. An instructor’s “competency” is a person’s ability to possess adequate skill, knowledge, attitude, or behavior to perform certain tasks professionally at the schools. Thus quality, ability, and skills to do certain activity competently. Competencies of TVET instructors are exactly those skills, knowledge, attitudes, values, tasks, and appreciations that are related to teaching and training within the sphere of TVET. Globally, TVET teachers should be competent in managing classroom and workshop, handling teaching aids, assessing, and evaluating students’ performance, applying various teaching methods, recognizing students’ learning styles, meeting the needs of students in the classroom, and more importantly, imparting the necessary technical knowledge and vocational skills efficiently and effectively. Instructors’ Competency Framework can be regarded as an instrument or tool that identifies the needed competencies to minimize the challenges that are currently existing in the TVET institutions. Thus, competency framework includes competency standards, entry requirements, career-path, credits transfer, capacity building provisions, and certification. The positive relation between quality TVET and socio-economic development is well established.

Assuring quality in education has indeed become a top priority for academic institutions and is currently one of the most critical elements in the development of an education system (Morris, 2013). Quality assurance for TVET is quite a prominent area all over the world because of the expansion of the global competitive marketplace. International practices towards greater quality focus served to maintain professionalism, enhance stakeholder confidence, and enable personnel in the sector to adapt to the ever-changing global environment. As an example, the Australian Quality Training Framework (AQTF) was established in 2001 as a body for providing minimum quality standards for the registration of training organizations in Australia. Since 2007, it has introduced additional criteria called “excellence criteria” in a new concept called continuous improvement or reflective practice which is outcome focused, nationally consistent, streamlined, and transparent (Agbola & Lambert, 2010). Multilateral and Bilateral organizations working in TVET sectors such as the Asian Development Bank (ADB), the World Bank (WB), the European Union (EU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Labor Organization (ILO), the Swiss Development Co-operation (SDC) and others have strongly expressed interest in quality assurance in TVET system. UNESCO has focused and emphasized the need to improve the quality of education in its programs (UNESCO, 2012). International Network for Quality Assurance Agencies in Higher Education (INQAAHE) which collects and disseminates information on developing practices on the assessment and maintenance of quality in education providing uniformity of quality internationally (Morris, 2013).

In relation to TVET quality, quality assurance is a set of measures and activities to ensure that education and training services satisfy identified needs of industry, trainees, and society in a systematic and reliable way. Quality assurance and continual improvement components include TVET governance, industry-academia collaboration, national qualification framework, TVET delivery, competency-based training, and assessment, TVET quality standards and research and cooperation against which TVET quality can be assessed. If TVET does not lead to satisfactory outcomes, everyone loses. TVET quality, therefore, is of common interest and this is what motivates cooperation and collaborative efforts of all concerned in the field of quality assurance in TVET (Sharma, 2019b). In today's fast changing environment, new innovative approaches to performance monitoring, measurement of quality or output-based policies, such as Competency Based Education and Training (CBET) and assessment are applied to assure the required quality in terms of competency achievement. The aim of quality assurance in TVET is to support processes and procedures that ensure good TVET.

Quality assurance is fundamental to qualifications because trust and transparency in qualifications are a requisite for the comparability and recognition of qualifications at both the national and international levels. To ensure the validity and trustworthiness of qualifications and certificates, the qualifying and certification process needs to be underpinned by reliable and standardized quality assurance arrangements and mechanisms. Quality in TVET requires its attendant's employability and meeting both students and employer's

demand. Responsibility that increased clarity, collaboration between school and working life, and workplace learning will lead to an emerged quality should be shared between the student, the school, and the industry (Jayalatha, 2017).

Technical and Vocational Education and Training (TVET) is gaining popularity in Nepal in recent years. It is recognized as a key pillar of Nepal's education sector in the constitution and development plans. There has been massive expansion of TEVT institutions and provisions along with the diversification of programs. Expansion of TVET programs intensified after introduction of TVET in community schools as a technical stream. Growing expansion of TVET institutions and programs in recent years also raised the concerns of quality. There is focus and investment of both materials and human resources from both internal and external sources. However, the attempts in the development of TVET relevancy, efficiency and quality have remained low. Mismatch between demand and supply of the labor market have prevented TVET from meaningfully contributing to the national economy. So far, very limited resources have been allocated to enhance and assure the quality and relevance of the numerous TVET programs delivered across the country. Service delivery is not linked to funding based on quality-therefore TVET schools have had limited incentives to 'do better' and improve the learning environment for their students. Low efficiency and effectiveness of the programs are not only preventing to address well employment outcomes they are also heavily reducing the enrollment rate in TVET programs. The table below shows the status of student enrollment in the CTEVT

run pre-diploma and diploma level programs in last two academic years.

The data above indicates that TVET institutions are not able to enroll adequate students against their enrollment capacity.

Table 1

Student Enrollment Status in TVET programs.

| Programs | Academic Year 2076/077 | | % | Academic Year 2077/078 | | % |
|-------------|------------------------|------------------|-------|------------------------|------------------|-------|
| | Enrollment Capacity | Total Enrollment | | Enrollment Capacity | Total Enrollment | |
| Pre-Diploma | 37,905 | 21,499 | 56.71 | 28,555 | 12,123 | 42.45 |
| Diploma | 45,384 | 25,987 | 57.26 | 46,072 | 32,559 | 70.66 |
| Total | 83,289 | 47,486 | 57.01 | 74,627 | 44,682 | 59.87 |

Source: Annual Report of CTEVT (2022)

One of the major reasons for that could be poor quality of TVET institutes. In pre-diploma programs run by CTEVT there is only about 43 percent enrollment. Institutes which have been conducting the programs based on the students' fee have difficulty in fulfilling the minimum requirements. Some of the schools have less than 20 percent of students against their enrolment capacity. Such schools have very poor resources such as classroom, lab, tools and equipment, library, instructors. To attain the objectives mentioned in the 15th national development plan, TVET will require investment in quality improvement of the institutions, i.e. investment in quality instructors, curriculum, physical infrastructure and equipment, incentives to the schools and development of mechanism to effectively participate the private sector in developing productive workforce. Strengthening of quality assurance system through establishing accreditation in TVET to ensure the TVET institutions meet minimum quality standards defined nationally (Sharma, 2019a). Considering those facts that the world is becoming more quality focused, inclusive, and interdependent, it is evident that a clear

provision of quality assurance in Nepal's TVET system is a critical necessity to meet the demands of learners and the world marketplace.

The issue of quality technical and vocational education and training (TVET) as tool for self-reliance is a fact that cannot be discarded or over emphasized. The revelation from the study shows the quality of students admitted to technical colleges. The quality of students and their background is a determinant factor of how well the students will perform. Technical schools as an institution that provides craftsmen and women for the general society has some inadequacies. As revealed from the study, problems relating to diversifying instructional methods to creating enough practical periods for necessary skill acquisition as a strong base for quality training are against the requirement of UNESCO that special efforts should be made to ensure that national technical and vocational education seeks to meet international standards. The TVET institutes should have fulfilled the quality standards adequacy and well managed physical and human resources. Again, to meet the twenty-first century demand,

UNESCO (2018) advocates for learner-centered innovative and flexible approaches to all programs including curriculum re-orientation. Low performance of the instructors/trainers, insufficient facilities and inadequate availability instructional material will make the training institution laboratory different from expected industrial setting. Quality assurance whether external or internal and irrespective of how quality is defined requires established benchmarks against which qualifications, courses and providers can be assessed. In TVET this includes several activities, starting from the self-assessment of the institution and finishing with the use of the outputs of the assessment.

Conclusion

Quality TVET is supported by three key pillars: ensuring access to quality teachers; providing use of quality learning tools and professional development; and the establishment of safe and supportive quality learning environments. Through the analysis of the students, school, instructional materials, and government have been identified as necessity for attaining quality TVET program that can cater for economic growth of the nation and the wellbeing of the country through self-reliance. All TVET institutions and programs are to be brought under the quality assurance mechanism through accreditations to ensure all are operated maintaining quality standards. CTEVT as a policy making agency should more concentrate in quality control and quality assurance rather than implementation of the TVET programs. With the increasing realization that TVET programs are of paramount importance in the social,

educational, and economic scene, more and more emphasis is being placed in quality control and quality assurance. In addition, investment from government or from people in TVET is significantly higher. Utility and return on investment would be higher if TVET institutes prepare students of superior quality capable enough to compete for the job in the labor market. The time has come when national responsible body authorized for quality assurance takes a public stand for integrity of action.

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Article

Technical and Vocational Education and Training in Federal Nepal: A Critical Analysis

Usha Bhandari^{*a}

^aSwiss Agency for Development and Cooperation (SDC)

Abstract

The technical and vocational education and training (TVET) in Nepal is one of the much discussed agenda for its contribution to socio-economic development of the country. Historically, Nepal's TVET system is striving for being innovative and compatible with the global trends. With the Nepal's Constitution 2015, it has received a considerable attention, as the constitution (in article 51, h, 1) highlights the notion of TVET along with the allocation of TVET responsibilities to all three tiers of government. However, due to differing understanding among the policy makers, including existing several issues and concerns, the development of TVET sector in Nepal has been slow off the mark. Yet, Nepal has many opportunities for reforming the TVET sector in the coming days. There is an urgent need of paradigm shift in action, thoughts and visions in line with the constitution to harness the benefit of TVET sector - to achieve the goal of socio-economic prosperity of the country.

Keywords: TVET, VET, qualifications, reform, governance

Introduction

The technical and vocational education and training (TVET) is perceived as an inevitable means to enable human resources in the labor market to contribute to socio-economic development of the country. In the context of developing countries, TVET plays a significant role in providing competitive human resources to contribute to the social, economic and environmental developments of the country; is viewed as a tool for productivity enhancement and poverty reduction (Pavlova, 2014). In low-income countries like Nepal, it is a crucial measure to develop productive human resources who can contribute to country's prosperity (Ministry of Education Science and

Technology [MoEST], 2018). Furthermore, TVET is also considered as a mechanism to alleviate poverty (Hollander & Mar, 2009); to promote peace, foster conservation of the environment, and to improve the quality of human life and promote sustainable development (UNESCO, 2005).

Globally, TVET's landscape is changing in response to changing social, political and economic factors as well as labor market trends driven by technological advancements (Kanwar et al., 2019). Nepal is also witnessing these changes. Nepal's TVET system is gradually striving for innovativeness to be compatible with the global trends. In recent

^{*}Corresponding author. Email: usha.bhandari@eda.admin.ch

years, it has received a considerable attention. It is also due to the highlight of TVET notion by Nepal's Constitution 2015 (in article 51, h, 1), which envisions the development of competent and professional human resources through a “scientific, technical, vocational, empirical, employment and people-oriented” education (GoN, 2015). The constitution has allocated TVET responsibilities to all three tiers of government as the concurrent rights. In addition, there are elaborate roles and responsibilities of three tiers of government, which depict that each tier has its own mandate. For instance, the federal government is responsible for national policy, standards, and frameworks, whereas the provincial and local governments are responsible for implementing TVET programs (GoN, 2017).

The article in the constitution clearly indicates that TVET is indispensable for developing competent human resources that are imperative to Nepal's economic development. TVET is therefore a main vehicle for human capital development, which has provided Nepal a unique opportunity to start a new era of socio-economic transformation and prosperity. Consequently, the TVET sector has become an attractive agenda for Nepal's development initiative. As such, several policy documents of the Government of Nepal (GoN) have emphasized its importance for achieving an inclusive economic development and shared prosperity for its citizens. National Education Policy (NEP), which was endorsed by the Council of Ministers highlights the importance of TVET and skills development and the need to expand the reach of TVET services. Subsequently, the fifteenth five-year periodic plan (2019/20–2022/23)

strategically highlights the need and provision of skills development for youth, including the systematic capacity development of TVET, with a focus on apprenticeship and life-long learning (GoN, 2019). Besides, Nepal's budget book for the fiscal year 2022-23 has highlighted the importance of mobilization of available natural resources, human resource, capital, and technology to generate employment and alleviate poverty. This implies the importance of technically competent workforce that can be produced through TVET programs (GoN, 2022).

In addition, academics frequently engage in the discussions, debates as well as in the research activities to whet the improvement of TVET sector policies. Similarly, international development partners have chosen it as one of their priority sectors and thus as an entry point to spur Nepal's development. Despite growing understanding among the policymakers and other stakeholders, and TVET being of paramount importance for economic progress, a concrete vision in the TVET sector is yet to come. There exist several issues that prevent policy makers to reach a consensus for translating the impetus of TVET sector reform into concrete action. Focusing on a few major issues and concerns, this paper, in general, highlights the meaning and purpose of TVET in Nepal, and in particular, the description of national TVET evolution that would assist in developing a common understanding among the major stakeholders, mainly the policy makers. The discussion then concentrates on the current practices, including related challenges and iterates possible solutions to address these challenges.

Meaning and Purpose of TVET

Internationally, the “TVET” is most frequently used term. Although there is a similar understanding of its meaning and purpose around the globe, the definitions used are not uniform and have been continuously updated in different periods. The UNESCO promotes TVET as an integral part of education. It elaborates technical and vocational training as a comprehensive term referring to those aspects of the educational process, involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (Cong & Wang, 2012). While this definition covers only the aspects of education, the International Labor Organization (ILO) emphasizes the facets of training for employment at the workplace by including conditions of decent work and of workers’ welfare as a global claim to be satisfied in the 21st century (Hollander & Mars, 2009). From the above definitions, it is deduced that TVET consists of both education and training. It is also clear that its essential purpose is to provide knowledge and skills required in the world of work (UNESCO, 2013).

Another important concern is the place where TVET can be provided. Cong and Wang (2012) put forward that it can be offered by the educational institutions and jointly by educational and industrial, agricultural, commercial or any other institutions related to the work of giving opportunities to youth to gain technical theoretical knowledge and practical experiences. TVET can also take place in general schools, such as formal schools (i.e., from kindergarten to Grade 12

or 13) or in post-secondary community and/or technical colleges, and by distance mode (Maclean & Lai, 2011). The key differences between TVET and general education is that TVET accords higher priority to practical, technical and vocational skills rather than largely academic knowledge (Maclean et al., 2012).

Moreover, universities also offer TVET. In the recent years, the argument that runs ‘If it is university education it can’t be VET’ is gradually changing, as there are many TVET programs introduced in various countries at the level of professional Bachelor, Master and Doctoral degrees; dual study programs as well as the ‘vocational drift’ in higher education (European Centre for the Development of Vocational Training, 2017). McLean and Pavlova (2013) published a diverse pattern of TVET provisions; many versions of post-secondary and tertiary levels of TVET are in place around the globe. The degree and the nature of vocational drift depends upon the level of economic development and on cultural traditions of the specific country (UNESCO, 2013).

Summing up the above discussions, the broader definition of TVET can be considered as the one elaborated by UNESCO in 2015. It explains TVET as comprising the development of education, training and skills relating to a wide range of occupational fields, production, services and livelihoods. TVET, as part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development intended to lead to qualifications. TVET includes a wide range of skills development opportunities

embedded in national and local contexts. Learning to learn, the development of literacy and computational skills, transversal skills and citizenship skills are integral components of TVET (Field & Guez, 2018). Alternative terms used internationally include vocational education and training (VET), vocational and technical education and training (VTET), technical and vocational education (TVE), vocational and technical education (VTE), further education and training (FET), career and technical education (CTE) (McLean & Lai, 2011).

In the context of Nepal, the “TVET” is the term being used since the establishment of the TVET system in the country - particularly after the establishment of an umbrella TVET institution, the Council for Technical Education and Vocational training (CTEVT) in 1989 - to understand the separate provisions of Technical Education (TE) and Vocational Training (VT). TE is understood as a means to provide long-term courses that include the theories and science behind the practical occupation and was offered at technical schools, while VT is understood as comprising relatively short courses that are based on a more hands-on approach, focusing on the skills needed to perform the job. When the debate of using a common terminology instead of multiple terminologies was ongoing, Nepal picked up the term TVET, as reflected in several documents.

TVET as a combined term focuses a ‘holistic’ approach of individual development, meaning that the role of TVET includes educating the whole person, and not just the worker as part of it (UNESCO, 2012). Although Nepal has started using the combined term ‘TVET’, the importance of this strategy has been

undermined. Since its beginning, TVET was perceived as providing vital skills to young people who are from difficult geographical territories, are poor, are dropouts or have no access to formal education (Bhandari, 2013). Carrying such historical legacy, Nepal’s TVET sector emphasizes imparting skills for enabling youths to find employment for securing their livelihood which refers to the narrow understanding of providing training in the fields of lower-skilled, especially informal types of work, mostly home-based or “cottage” industries, such as sewing, knitting, or vegetable gardening (Chaffin, 2010).

As discussed, TVET is a broader concept, intended to prepare people for work related to a specific trade and occupation, and the completion of such programmes usually leads to a recognised qualification. TVET is based on two strong assumptions: a) training leads to productivity, and further to growth (training for growth), and b) skills lead to employability, and further to jobs (skills for work) (Anderson, 2009, as cited in McGrath, 2011). Both assumptions are valid in the context of Nepal. However, in Nepal, recognition of TVET with regard to its vibrant role in developing a new generation of individuals who could contribute to sustainable socio-economic development of the nation is yet to realize.

Evolution of TVET in Nepal

TVET before the Constitution 2015: Nepal’s TVET sector, in fact, has a long history. The evidences of ancient architectural structures and woodcarvings in the temples all over the country demonstrate that artisans of Nepal have been practicing TVET in the form of occupational skills as their social

tradition (Shrestha, 1991). A purposeful initiation of TVET can be traced back only to 1937; however, when Nepal started to implement vocational training to promote cottage industries and provide livelihood opportunities to people in Nepal. Furthermore, a formal start of TVET opportunities was only after democracy established in 1951, and the planned development of the TVET sector began only in 1971 (Gajurel, 2010). These initiatives were further institutionalized, and streamlined when the Council for Technical Education and Vocational Training (CTEVT) was established in 1989. The major tasks of CTEVT are to coordinate, develop and strengthen TVET in the country.

Since then, the TVET sector is advanced as a subsector of education, mainly for two purposes: i) to provide individuals with the needed skills and knowledge for earning their livelihood, and ii) to meet the country's need for skilled human resources for national development (Parajuli et al., 2020). Both purposes are important for Nepal to economically prosper. However, higher priority was accorded to the first subject, which has resulted in the fragmentation of the TVET sector. This was evident as the TVET was offered in the past under nearly 17 ministries, including that of Education (Caves & Renold, 2018).

The TVET in contemporary Nepal (after the Constitution 2015): Since the promulgation of the constitution, Nepal is a federal country with 7 Provinces and 753 local governments. The TVET functions are allocated at all three government levels as reflected in several (published and unpublished) documents, such as the constitutional unbundling report (unpublished) and the 15th five-year plan of

the National Planning Commission (GoN, 2019). According to the Constitution, federal ministries and institutions, such as the CTEVT are responsible for setting national policy, framework and standards in TVET, whereas the Provinces are responsible for developing provincial TVET policies, as well as to implement and assure the quality of the TVET programs. Similarly, local governments are responsible for planning, budget allocation, implementation and monitoring of skills training (GoN, 2015 & 2018). However, there exists a gray line between the roles of federal, provinces and local governments due to the absence of a new legal base, the roles and functions of all three tiers of governments in the TVET sector.

CTEVT is the leading agency for Nepal's TVET sector as mandated by its law formulated before the current Constitution of Nepal 2015. Based on its existing legal mandate, CTEVT offers long-term programs (on Pre-diploma and Diploma level) through the (private and public) technical schools/polytechnics, affiliated partner schools as well as through community schools. At present, CTEVT's long-term programs in various subjects are offered through its 63 constituent schools, 42 partnership schools, 572 community schools and 429 private technical schools (CTEVT, 2021). Besides the long-term programs offered under the CTEVT, the fragmentation of TVET sector is continued as TVET is offered through several ministries at federal and at province levels. At federal level, in addition to the MoEST, currently, more than ten other ministries offer short-term skills training in the name of TVET (MoEST, 2018).

TVET has received a high priority and great attention by all sectoral ministries at province level as well as by local governments. However, in the name of TVET, a mere offer of skills training is more common. Almost no province or local governments have developed a clear vision of the TVET sector as per their mandate. For example, the Ministry of Social Development (MoSD) and other ministries, such as the Ministry of Agriculture, and the Ministry of Tourism etc. have offered skills training to thousands of young people at province level. Similarly, almost all local governments provide skills training to the youths. Consequently, there is sheer lack of uniformity in these trainings.

TVET is also offered at secondary schools throughout Grade nine to twelve in technical stream. Despite heavy criticism of inadequate preparation while initiating TVET subjects there (Wagley, 2014), it has become a national campaign and is implemented by the Center for Education and Human Resource Development (CEHRD) at 485 high schools. These schools have an enrolment quota of 48 students per academic session and provide on-the-job training support to the students (MoEST, 2022).

Current Issues

The above considerations demonstrate that Nepal's TVET sector is fragmented, scattered, has no uniform understanding, warranting a development of a consolidated vision for a sectoral reform. This is due to several pertinent issues existing for many years and awaiting a solution. The issues that need to be addressed are the following:

Narrow understanding of meaning and purpose of TVET: While education in general

has always been a priority sector in Nepal, TVET is often perceived as a second-choice formation. TVET is normally targeted to those who failed or have dropped out from the education system. As such, it has been understood as a vehicle for social protection and thus considered as a quick heal to support those who are in a dire need of livelihood means. Although TVET is acknowledged as a subsector of general education, it has never received an equal level of recognition. Since ancient time, general education has been considered as the formation for the leaders who rule the country, whereas TVET has been associated with those classes of society who have to work just for securing their living. The TVET policies and plans in the past were guided by such limited understanding. In addition, they were focused on the supply side, emphasizing the skill deficits in the labor market, and often based on a wrong premise of the learners' skill levels. The notion of TVET was considered as to prepare people for their mere livelihood. Therefore, the focus was on the conveyance of skills for enabling them to enter the job market.

Fragmentation of the TVET Sector: Although CTEVT is the apex body of TVET in the country, the absence of a well-coordinated and integrated national TVET system has caused prevailing fragmentation of the TVET services (World Bank, 2011). It has seriously hampered the key aspects of TVET sector, such as quality, relevance, efficiency, access and participation as well as the integration of the system under one qualification framework. The Constitution of Nepal 2015 has expected that the country would get the national TVET policy and act, which would help to resolve these fragmentation problems. However, in the absence of the necessary

legal provisions, they have perpetuated. This issue also extends to the fear of emerging confusion among the three tiers of the governments regarding their respective roles.

Lack of Concrete Vision: For lack of an integrated system vis-à-vis relevant policies and acts, the TVET sector does not possess a concrete and consolidated vision for the country. As a result, no commitments by all stakeholders who would be essential for a vibrant TVET are available yet. In view of the fragmentation in this sector, there can be the large number of unwarranted TVET activities in the country, which are yet to be concretized. Visioning of TVET sector is not only about the visioning of the formation of the human resources needed for the country but also of the specific requirements of TVET professionals, such as planners, leaders, managers, researchers, instructors, curriculum developers etc. It further includes financial planning for the short and long-term development of the TVET sector. As a concrete vision is absent, the requirements are not clear yet.

Delayed Reorganization of Existing Institutions and their Functions in line with Constitutional Mandate: Although the Constitution of Nepal provides all three tiers of governments the rights and responsibilities to implement their TVET mandates, in practice, provinces and local governments are unable to utilize their rights and responsibilities. It is mainly because of the absence of an enabling legal and regulatory framework (e.g. federal TVET act) that could clarify the functions of three tiers of government in line with the constitution (NITI Foundation, 2022).

Lack of Recognition of Role of Private Sector: Since the beginning, Nepal's TVET sector has been led by government actors. While planning the skilling of thousands of young people, they have rarely consulted the private sector for understanding the real labor market requirements. The role of the private sector has always been undermined and considered merely a partner in the training cycle. Private actors are usually just invited for their inputs into the curriculum or their support during the on-the-job training. However, they are rarely considered as important partners in the process of developing human resources through the TVET sector. Renold et al. (2016) emphasize that the best TVET systems can be recognised by their involvement of all relevant stakeholders, especially those from business and industry.

TVET Sector Reform: A Way Forward

Nepal has many opportunities for reforming the TVET sector. After many years of struggle, TVET is now firmly on the Government of Nepal's agenda and the mandate of all three tiers of the governments. It has become a cornerstone for the transformation of the country's education and training system. Its contributions to social and economic development can be further enhanced by developing a more diverse concept of TVET. In particular, the TVET system calls for a paradigm shift. There is an urgent need for changing the thinking and visioning of the TVET sector beyond its importance of imparting skills to people for their mere livelihood. One of the major shifts is the integration of the international tool-kit into the TVET sector reform. It includes national qualifications frameworks, quality assurance regimes, institutional autonomy as well as national governance structures (Mcgarth, 2011).

The national qualifications framework is essential for a permeable TVET system - i.e. the presence of progression routes throughout the TVET and general education systems so that individuals can enter programs both vertically to higher occupational qualifications, and horizontally to higher general-education qualifications (Caves & Renold, 2017). Nepal has approved the National Qualifications Framework (NQF) that allows the permeability of the whole education system, including of TVET by the alignment of all courses and programs with the NQF. It demands for operationalization of NQF as soon as possible to benefit larger number of individuals to enable them to enter the labor market with recognized certificates or to upgrade their career through higher level training/education. Moreover, the importance of NQF and urgency of its operationalization for the production of competent human resources in the country has become a prime agenda of discussion during the preparation of TVET Sector Strategic Plan (TSSP). The development of TSSP is led by the MoEST and has involved all major stakeholders that include sectoral ministries at federal level, provinces and local governments, private sector as well as development partners.

Quality assurance in TVET includes an accreditation of the programs and institutions, as well as certification from recognized authorities so that graduates can demonstrate their skills to potential employers. According to the constitutional mandates, standards of institutional accreditation should be developed by the CTEVT (with a new role) at federal level. On this basis, provincial and local governments can apply accreditation standards according to their mandate and by

respecting the federal standards and criteria. Accreditation of courses and programs are performed in line with the NQF. Furthermore, Nepal needs to carefully develop a plan for securing the quality of TVET professionals in the groups of instructors, curriculum developers, assessors, supervisors, managers and others who are indispensable for the quality of the TVET sector.

Institutional autonomy and national governance are pre-requisites for efficient and effective TVET processes based on the normative standards decided by each country. Moving away from the fragmented system, where trainings are provided by several institutions under several ministries with no uniform standards, Nepal could opt for a shared national TVET vision, mutually fixed and coordinated in the country level and implemented by all government and private actors at different tiers as per their mandate. Approval and careful implementation of the TSSP in collaboration among all three tiers of the government is the major way forward to move ahead with a shared national vision to reform TVET sector in Nepal.

However, it is very important and urgent to enable all three tiers of governments to utilize their rights and responsibilities in TVET sector in practice in line with the constitution. Hence, it demands for the mutually agreed legal and regulatory framework (e.g. federal TVET act) that could clarify the functions of three tiers of government sooner as possible.

Conclusion

This paper has discussed the issues and concerns of the Nepali TVET system. Although it carries the notion that TVET is just conceptualized for those who

are academically less endowed, and are preparing themselves to enter labor market, its recent development is promising. With the promulgation of the Constitution in 2015, Nepal has sufficient prospects to advance the TVET sector through meaningful reform initiatives.

Consequently, Nepal can develop a shared vision of its TVET sector for the next decades. Such a vision should consider the rights and abilities of Nepal's youths to individually decide the vocational pathways to shape their lives on their own, to participate in the labor market, and the development of the quality and quantity of human capital needed to support country's economic development. Development of the TSSP is a very good example of a shared vision. However, without the clarity of roles and responsibilities of all entities involved in the TVET sector as well as conformity of their legal mandates, the shared vision of TVET sector could hardly be achieved.

Furthermore, generating an empirical evidences through regular review, discussion, research and studies regarding the TVET development and the efforts placed on its reform are very important. Such research can be conducted at least at two levels. At the government level, careful analysis of utilization of TVET mandates by three tiers of government and finding out the gaps and opportunities for the collaboration among them could provide further information to improve the TVET sector. Similarly, quality of TVET courses and TVET professionals, youths' perception towards TVET courses and programs, emerging roles of the private sector in the TVET and its future prospects etc. could be other areas of research which

could generate information to spur TVET sector reform in Nepal.

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Article

Phasing out of Technical School Leaving Certificate (TSLC) Programs in Health: A Scenario Analysis

Rojina Basnet^{*a} and Chetan Karki Pyakurel^b

^aInstitute of Medicine (IOM), Tribhuvan University

^bLittle Buddha College of Health Science

Abstract

The education and training to the mid-level health workers has been provided in Nepal through the institutions run under the CTEVT. Currently, CTEVT is running various Diploma programs in health sectors like General Medicine, Nursing, Medical Lab Technology, Ophthalmic Science and Dental Science. However, TSLC (Pre-diploma) programs like Assistant Nurse Midwife (ANM), Community Medical Assistant (CMA), Lab Assistant, Assistant Ayurveda Health Worker, Dental Hygienist have been phased out since 2076 after the enforcement of the National Medical Education Act 2018. Nepal has a shortage of health workers with only seven health workers per 10,000 populations. As a result of the phase out of health related TSLC programs under the CTEVT, there will be scarcity of the mid-level paramedical health workers who have direct relation with the community people and the basic level health services.

This review article has tried to highlight the importance of mid-level health workers and effect of phasing out of TSLC programs by CTEVT in the health sector of Nepal. As per the Mathema Report, the major reasons for phasing out of the programs are lack of proper monitoring and regulatory mechanism of institutions running TSLC programs, as most of the colleges practiced to enroll students without quality and lack of proper supervision to the passed-out students. However, due to the removal of the programs, there might be less access to the skilled training, especially of the poor, women, and disadvantaged groups which has created inequitable development of skills in the health workforce. In response to the issues and challenges in incorporating TVET in the development of health workforce, TVET programs, mostly TSLC, should get top priority and the medical education system should be flexible and should reconsider the provision of the National Medical Education Act 2018 on rethinking for the re-launching the TSLC programs in health so that there will be availability of skilled and technically competent mid-level human resource for health.

Keywords: mid-level health workers, medical education, TSLC programs, phase out

Introduction

Mid-level health workers in the context of Nepal are health assistants, Auxiliary Health workers, CMAs, midwives etc. who are

providing basic healthcare services at remote rural parts of the country (Moola et al., 2019). These health workers provide services at all

^{*}Corresponding author. Email: rojinabasnet4@gmail.com

levels of healthcare services, particularly in the rural and remote areas to make up for the gaps in health workers with higher qualifications (World Health Organization, 2010). They are playing the role to bridge the gap between community people and the basic healthcare facilities. The services provided by them also empower the community healthcare settings (Desai et al., 2020). The availability of skilled human resources for health has become a crucial determinant of maintaining high quality of health of all the people of every country (Shrestha & Bhandari, 2018). For making mid-level health worker available, their development and production should be ensured. For this, CTVET has been playing a major role in the development and production of skilled mid-level human resource for health (Gupta et al., 2013).

The skilled and technically sound mid-level health workers have been emphasized in all the national and international policies and guidelines for serving in the underserved remote rural areas (Karkee, 2008). WHO thirteen general program of Work 2019-2023 promotes primary healthcare services that are provided by socially and technically competent and motivated multidisciplinary teams, using strategies and techniques informed by the best evidence available (WHO, 2017). Similarly, one of the objective of Second Long Term Health Plan of Nepal 1997-2017 is to provide the appropriate numbers, distribution and types of technically competent and socially responsible health personnel for quality healthcare throughout the country, particularly in the under-served areas (Sagun, 2017). The National Health Policy 1991 and 2076 has also focused on the development of capable and skilled human

resource to improve the quality of health services delivered by health workforce, specially by paramedics to ensure easy access to all those who are under-served (Status, 1991). Technical and vocational education is the primary means used for producing the mid-level health workers needed for the country (Paryono, 2017). Incorporating TVET in the medical education system can help in decreasing the reduction of unskilled human resources in health, especially the mid-level health workers i.e. paramedics (Ahmady & Shahbazi, 2022a). The skilled mid-level human resource is always in high priority in health sector in Nepal because they have direct connection with the community people (Nepal, 2010). In Nepal, as all people are not able to get modern health services from the qualified doctors and nurses and from the sophisticated private hospitals, the mid-level health workers can play a crucial role (Adhikari et al., 2022). The Council for Technical Education and Vocational Training (CTEVT) is the leading organization in TVET sector of Nepal which has focused on community-based vocational trainings and education for the purpose of providing training and skills to human resource for health (*Overview of Technical and Vocational Education in Nepal - Nepal Economic Forum*).

To progress towards universal health coverage, there is the need of health workforce that is aligned with population and community health needs, and who is capable of adjusting to the growing demand for healthcare delivery as per the transition in demography, epidemiological transition and transition in the disease pattern (Resources et al., 2016). A meta-analysis conducted in 2013 concluded that such type of health

services can be provided by the mid-level healthcare providers. As per the review, there is significant difference in the healthcare services provided by the specialist doctors and mid-level workers (Lassi et al., 2013). In addition, the services provided by the mid-level health workers are more cost-effective than the services provided by the specialist doctors or physicians (World Health Organization, 2010). Moreover, the specialist doctors are concentrated in urban areas, and most of them often migrate to abroad for better accommodation and better earning (Rao et al., 2013). So, there is a need of mid-level health workers who are responsible to provide the essential healthcare services in the rural areas of Nepal, and for producing such kind of human resource in health sector, CTEVT has been playing a great role for long (Ahmady & Shahbazi, 2022b). TVET institutions are major suppliers of mid-level health workforce who will be in the forefront in dealing directly with the community people (European Union and the Britian Nepal Medical Trust, 2012).

Human resources for health are formally produced in Nepal by CTEVT, different universities like Tribhuvan University, Purbanchal University, Pokhara University, Patan Academy for Health Sciences, BP Koirala Institute of Health Sciences, etc. through different mechanisms under the Ministry of Education, and Ministry of Health. They are regulated by the Ministry of Health through Nepal Medical Council (NMC), Nepal Nursing Council, Nepal Pharmacy Council, Nepal Health Professional Council, and Nepal Ayurveda Council (Magar, 2013). However, the need of mid-level health workers was being fulfilled only through the TSLC (pre-diploma) program

of CTEVT. Thus, this review has tried to highlight the impact of the phase out of TSLC program in the health sector in Nepal. As CTEVT institutions and stakeholders can play significant roles, including training and skill development education for the development of highly competent mid-level human resource for health, it will cause lack of health human resources with the phased out of the TSLC program.

Materials and Methods

We have reviewed different literatures available on internet such as websites of CTEVT, Nepal Medical Council, Department of Health Services, Medical Education Commission and other concerned authorities. All the relevant documents and information were analyzed and the final review included in this article. The titles and abstracts of studies as per the objective were screened. After that, the full text articles of eligible studies were reviewed. We independently reviewed all the full texts of the articles and summary provided by both reviewers have been included in this article.

Situation Analysis

Globally, the shortage of healthcare workers as per need is estimated to be 17.4 million, of which, nearly 2.6 million are doctors, almost 9 million nurses and midwives, and the remaining represents other paramedical health workers (Resources et al., 2016). The largest needs-based shortage of health workers is in south east Asia which is almost 6.9 million (Gupta et al., 2013). It has been projected that the shortage of healthcare workers will reach 122.9 million by 2035 (*Global Health Workforce Statistics Database*, WHO). Similarly, half of the

world's population resides in the rural areas; however, only 25% of the doctors and 38% of the nurses work in those areas creating a shortage in the health workforce (Dolea, 2009). The shortage of health workforce is more prevalent in the developing countries. Nearly 57 countries, majority of the Africa and Asia, face severe healthcare workers' crisis (Lehmann, 2008). Similar shortage also exists in Nepal as the need of human resource for health has not been fulfilled because of shortage of technically competent health professionals (Baral et al., 2013). Although universities and medical colleges are producing numerous number of doctors and nurses, there is still huge shortage of qualified mid-level health workers like health assistants, midwives, and CMA (C& Bhandari, 2012). The market has been supplying a good number of human resources for health; still, there is a shortage of critical human resource for service delivery. As per the latest data, there is a need of 7,000 trained skilled birth attendants, but the supply is only 1,000 (C & Bhandari R, 2012). Similarly, there are 0.67 doctors and nurses per 1,000 population which is significantly lower than the World Health Organization's recommendation of 2.3 doctors, nurses and midwives per 1,000 individuals (Resources et al., 2016). The data of Nepal health system shows that only 4% of the total healthcare providers are doctors, 12 percent nurses, excluding ANMs, 47% paramedics, 0.92% public health officers and 3.1 % traditional healthcare providers (JICA, 2000). This suggests that there is a high number of unskilled health staff, nearly 29 % of the total healthcare workers (Sherchand, 2013). This has created a challenge for the health system of Nepal- urgency to reduce the volume of unskilled and semi-skilled health

human resource. One of the major challenges of human resource in health is lack of skill manpower and low opportunity for pre and in-service training (WHO, 2017). In Nepal, the largest group of health sector workers i.e. 33% is from the health management and support staffs (cleaners, ward helpers and other non-clinical support staffs) followed by paramedical practitioners (mid-level) i.e. 26 % (Magar, 2013). These mid-level health workers are mainly produced through the medical institutes under CTEVT. However, CTEVT has discontinued the Pre-Diploma programs from the year 2077 BS as per the National Medical Education Act 2018. The mid-level health worker requirement is still not fulfilled at the grassroots level of Nepal.

Importance of TSLC Programs in Health

Healthcare need of developing country, including Nepal is rapidly increasing. In Nepal, two-thirds of the people live in rural areas and only one third of the population live in urban areas, whereas two thirds of the healthcare staffs are working in either Kathmandu or cities, leaving rural areas under-staffed, with absenteeism of the staffs (C & Bhandari R, 2012). Over half of poor population (52.4 %) live in rural areas with less access to health care services (National Planning Commission [NPC], 2021). Similarly, the health facilities are also inadequate to meet the demands of the people. To get over with health issues Nepal requires healthcare professionals and healthcare facilities for providing required healthcare support (*Assessing Quality Health and Care in Nepal - Nepal | ReliefWeb*). Mid-level health workers can thus fulfill this demand of healthcare services of the rural people who have less access to healthcare services (Lama

et al., 2017). Evidence suggests that where the mid-level health workers are adequately trained, supported and supervised, they can deliver essential health services with similar quality standards as specialist doctors at low cost (WHO, 2017). Mid-level health workers should therefore be included as part of general health planning and management of health system so as to provide the health services to the underserved remote rural areas of Nepal. These healthcare providers constitute the base of the Health Care Pyramid and are required in adequate numbers for the better and optimal performance of the healthcare system (Chhina et al., 2017). Mid-level paramedical health workers are responsible for providing preventive, promotive, curative and rehabilitative services as well as primary health services for individuals, family, groups and communities through various level of health delivery system, such as Sub Health Post, Health Post, Primary Health Care Center and District Level hospitals (Karkee, 2008). These health workers are directly linked with the community people and their emotions and are very essential to provide the basic level health service (Hartzler et al., 2018). These health workers are mainly involved to support the health system of Nepal by providing the basic healthcare, community healthcare, including basic medicine, health management and environment sanitation, basic medical procedures, basic surgery and first aid and MCH, FP, nutrition either directly at home or in the grassroots level healthcare centers (World Health Organization, 2007). Evidences suggested that mid-level health workers have improved access to and coverage of health services, and that often well trained and well-motivated mid-level health workers provide superior quality and more accessible services than better qualified,

specialists but less motivated professionals (World Health Organization, 2010). Because of the poor career prospects and lack of sanctioned posts, there is demotivation to the specialized doctors and physicians and are not providing the healthcare services as per need (Nguyen et al., 2015). In such case as well, mid-level health workers can fill the gap and TSLC health related programs of CTEVT were responsible for producing such health workers. Mid-level health workers developed through the TSLC program succeeded in developing a functional tier of health professional at different level of health care delivery system (Perry, 2013).

A severe and growing shortage of health workers has been a major concern of Nepal healthcare system with high disease burden. At such situation, one strategy to fulfill the vacant post and to reduce health worker shortage and improve access to and quality of health services is to accelerate the use of mid-level health workers (Ministry of Health, 2015). In the shortage of doctors and specialists, the shift in role to mid-level health care provider will relieve the overburdened doctors and specialists, especially in rural areas (Okyere et al., 2017). These level healthcare providers will help to provide easy and affordable health services to the people of Nepal and also play a key role in achieving the targets of Universal Health Coverage (*Nepal | Universal Health Coverage Partnership*).

Major Reasons behind Phasing out of TSLC Programs

The main reason behind the phase out of TSLC program was due to the recommendation made by the Kedar Bhakta

Mathema-led panel report 2072 B.S. The report had argued that many institutions have been passing out students without proper education and training which have led to lack of quality health persons. The National Medical Education Act 2018 had incorporated the Mathema panel report with the provision of phasing out of the TSLC courses of CTEVT. The level of understanding regarding importance of mid-level health workforce, its ownership, the will or commitment of the stakeholders and capacity of the policymakers and practitioners also vary (Kruk et al., 2018). Considering the backgrounds of the human resource in health and difference in socio-political status, the focus of health sector for developing technically competent human resource in health may also vary and thus the focus of human resource for health has been shifted to specialized medical doctors (Kabene et al., 2006).

Consequences of Phasing out of TSLC Health Programs

There are many documented cases of comparable results provided by different national level documents that due to shorter duration of trainings, low salaries and benefits, less consultation fee, shorter travelling distance as they live near in rural areas, mid-level health workers are more beneficial than specialist doctors and physicians in case of catering the basic essential healthcare services (Moola et al., 2019). Also the deployment of doctors and specialists in small health centers of remote areas might result in limited use of their skills with ensuring inefficiencies, demotivation and low retention rate (Henry & Hooker, 2008). After the discontinuation of the Pre-

Diploma course, there might be shortage of grassroots level human resource in health and all these basic level health services will be affected. Nepal is different in terms of socioeconomic and, political backgrounds and the situation of human resource in health from other countries. The land topography is also very complex, leading to unequal distribution of the human resource in health and inequality in healthcare services up to the remote rural areas. The phase out of the TSLC programs might cause people less access to the basic healthcare services to all those who are marginalized and deprived of the health services.

As per latest data, though there is a marked reduction in multidimensional poverty- still 4.9 million people are multi-dimensionally poor, which is 17.4% of the whole population of Nepal (NPC, 2021). It results in difficulty to cater better healthcare services to the marginalized and rural people. The consultancy cost for medical doctors and specialist physicians are very high. It might cause economic burden to general people and there will be low utilization of the services because of the high cost of the services provided by the specialist doctors (Mosadeghrad, 2014). With this, phasing out TSLC program might increase the cost of the services to the general people. Similarly, the education expenses and the production cost of doctors and specialized doctors are also high, thereby causing economic burden to the country (Cunningham, 2009).

Another consequence of phasing out of the TSLC program is that there will be inequitable distribution of health workers (Wibulpolprasert & Pengpaibon, 2003). If TSLC program has been phased out, then the

task sharing by the mid-level health workers will not be available and all the works from complicated diagnosis and treatment to simple preventive services should be provided by the specialist doctors because of which there will be burden; or the work to medical doctors and specialized health care providers and the quality of the services will also degrade (WHO, 2008).

On the other hand, the Public Service Commission has not stopped advertising the post for the mid-level health workers. So, phasing out of the TSLC program might impact on the production of the candidates requiring for the post and thus there might be shortage of such candidates in future (*Public Service Commission*).

Conclusion and Way Forward

Healthcare provided by the mid-level health workers, especially by health assistants, CMA, midwives in specific health service delivery areas has been found to be quite effective in the absence of care and services provided by physicians and specialist doctors. Mid-level health workers with adequate training, support, supervision, recognition and payment can provide better services to the people of community up to the rural level. For the production of the mid-level health workforce, there will be relatively low costs, reduced education and training duration; and they have potential for success in rural placement. So, their production should not be discontinued. Nepal must ensure that existing skilled human resource in health sector do not become a constraint on improving the health status of people, by investing in skills development and curbing the “brain drain” of skilled human resource

in health. Reflecting from what has been happening globally and locally, it is clear that TVET has gained momentum at the global, regional, and national levels for producing technically sound human resources who will serve in remote areas. TVET is the means for development of technically sound and competent mid-level human resource in health sector as well. It, as the major producer of skilled workforce, must play significant roles in addressing the scarcity of the mid-level human resources.

Technical and vocational education and training has been assisting in the medical sector of the country through Diploma and TSLC programs by providing skilled human resource for health. This has created an opportunity to get basic health services like preventive health services, emergency care, first aid services, nutrition education and supplementation, immunization and vaccination, basic maternal and child healthcare services, family planning services etc. by those people who have less access to the sophisticated healthcare services. This will help lead to equitable access to healthcare services, health promotion of the people and public participation in the health sector. One of the principles of the primary healthcare is appropriate skills and technology. This principle can be achieved through the training and educating the mid-level health workers and mobilizing them up to the grass root level.

Such type of mid-level health workers has been playing major roles in the development of health sector. Realizing the importance of mid-level human resource for health, the phase out of the TSLC program in health sector should be revisited and its alternative

solution to make quality TSLC program should be focused. Also, as the mid-level health workforce are cost effective, skilled workers, who occupy a big portion of whole health workforce in a nation, has been generated through TSLC program of CTEVT, so it is necessary for a country to think seriously about phase out of TSLC program.

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Article

Need of Market-based Skills Training to Create Employment Opportunities for Returnee Migrants in Madhesh Province

Bal Mukunda Neupane*

Abstract

A Rapid Market Appraisal (RMA) was conducted with the aim of exploring market prospects or the specific occupational skills in demand in the local markets of Madhesh Province so as to reintegrate the returnee migrant workers into the Nepalese economic system. In order to collect data for RMA, major key informants that are also the key labor market players of Madhesh Province like returnee migrant workers (RMWs), employers of major three occupational sectors (Construction, Agriculture and Tourism), training providers, entrepreneurs, and rural municipal representatives were identified from different seventeen municipalities of seven districts of Madhesh Province. While interacting with 87 returnee migrant workers (RMWs-64 as FGD and 23 as KII), it was found that around 70% of the 87 respondents did not have any specific skills learned in their respective destination countries, and the general skills acquired by them in such countries were not applicable in the context of Nepal.

Based on the collected data from 204 key informants of labor market, 24 different occupations were identified as highly demanding occupations in three occupational sectors, nine were in the construction sector, eight in the agriculture sector, and six in the tourism sector. It was also found that the Province, having the largest area of cultivated land in Nepal, is very potential for employing a bigger number of youths and returnees in the agriculture sector. However, it was felt necessary to make the agriculture sector truly attractive in terms of technology, financial access like floating subsidized loans and value addition. Regarding the access to the training and employment service providers (T&Es), there is sufficient access of training but maintaining the quality of training is a challenging issue, for which a mechanism has been suggested.

Keywords: rapid market appraisal, returnee migrant workers, skills gap, agro enterprise, destination countries

Background

The Madhesh Province that lies in the south-eastern region of Nepal was formed after the adoption of the Constitution of the Federal Democratic Republic of Nepal. It is Nepal's most populous province as well as the smallest province comprising of a total of

eight districts. It borders the Province No. 1 in the east, the Bagmati Province in the north and west, and India's Bihar state in the south. It has an area of 9,661 km² (3,730 sq. mi)-about 6.5% of the country's total area. It has a population of 6,126,288 as per the 2021

*Corresponding author. Email: bamune@gmail.com

Nepal census, making it the most populated province of Nepal. It has the high poverty rate of 24.2% (but lower than Sudurpaschim and Karnali provinces) (Nepal Rastra Bank [NRB], 2021) and the lowest Human Development Index among seven provinces of Nepal (Provincial Policy and Planning Commission, Province No. 2, 2077). The National Planning Commission (NPC) stated that Madhesh Province reported the highest unemployment rate (20.1 percent) which was 8.7 percentage points higher than the national average and employment rate of 31.8% (lower than the national average 34.2%). Thus, it is rational enough to select this province to explore economic opportunities for the returnees and chalk out plans and programs for their economic reintegration through Support to Knowledge and Life Long Skills (SKILLS) project. Similarly, 23.9% of the total migrant workers belong to this province and a sizeable number of them has returned home due to the COVID-19 crisis. In this background, SKILLS project of UNDP realized the need to conduct the rapid market appraisal (RMA) to reintegrate returnee migrant workers so that they would be mainstreamed in the economic system of Nepal.

A report published by the Institute for Strategic and Socio-economic Research (ISSR), Nepal (2020) mentioned that more than 600,000 Nepali migrant workers were likely to return home within a span of one year not only because of job loss but also of mental anxiety triggered by the pandemic. A large number of Nepali migrant laborers are also returning home before the actual expiry of full term of their contract, largely due to the non-renewal of contracts from the Gulf and Malaysian employers. As mentioned

in a report published by the Institute of Migration (IOM) (2020), this will further exacerbate the already gloomy scenario of the unemployment situation in Nepal. Even though around 500,000 youths enter the labor market every year, a majority of them find themselves bereft of job opportunities. This reflects how alarmingly Nepal is afflicted with the problem of joblessness.

At the same time, the inflow of remittances, a mainstay of the national economy of Nepal, has also been severely inhibited. Regarding the impacts of the pandemic on labor migration, the International Labor Organization in Nepal (ILO, 2020) stated that it has affected all aspects of human life, including the world of work, and further exacerbated the financial crisis, job crisis, rise in oil prices and trade renegotiations. The major objective of conducting the RMA, thus, was to identify specific occupational skills in demand in the local market and also the skills learned and brought by the returnee migrant workers (RMWs) to reintegrate them into the Nepalese economic system. Considering these facts in mind, the SKILLS project of UNDP decided to conduct RMA in Madhesh Province and Lumbini Province of Nepal for which I was selected to conduct RMA in Madhesh Province.

Methodology

Both qualitative and quantitative data were collected from the targeted areas of the Madhesh Province (17 rural municipalities and seven districts out of eight districts, except Mahottari). First, key informants for data collection were identified. Then, the potential occupations in each of the given three occupational sectors (construction, agriculture and tourism) were listed in

consultations with the Network of Returnee Migrant Workers (RMWs), Federation of Nepalese Chambers of Commerce and Industries (FNCCI) and Chamber of Commerce and Industries (CCIs) of Bara and Parsa including Nepalese Young Entrepreneurs Forum (NYEF) representatives.

In order to approach the returnee migrants, the list provided by the Returnee Migrant Network Nepal, and Migration Resource Centers at concerned District Administration

Offices were consulted to obtain the detailed information about returnee migrant workers. In case of Dhanusha, Saptari and Rautahat, since the detailed information was not available to the researcher, the snowball approach was used and 23 Returnee Migrant Workers were identified with the support from Migration Resource Centers of the concerned District Administration Office. In case of other four districts, Bara, Parsa, Mahottari and Siraha, FGDs were conducted with RMWs with the support of Returnee Migrant Network Nepal.

Table 1

Distribution of Key Informants, Data Sources and Methods

| Primary Data Source | Methods of Data Collection | Secondary Data Source | Remarks |
|--|---|---|---|
| Returnee Migrant Workers | Focused Group Discussion (FGD) 4 (64) | Province Profile | FGD in Bara, Parsa, Mahottari, Siraha, KII in other districts |
| CCI | Key Informants' Interview (KII) - 23 KII -5 | Periodic Plan of Madhesh Province | |
| Contractors' Associations | Indepth Interview-4 | Reports of MOF | In-depth Interview with professional associations |
| Hotel Associations Experts and Entrepreneurs | Indepth Interview-6 FGD-3 KII-12 | Report of IOM Report of RERP | |
| Local Government Representatives | KII-17 | District Profiles | 17 rural municipalities |
| Industries/Companies | KII-8 | Annual budget and program of rural municipalities | |

For the purpose of primary data collection from the identified key informants, key informants' interview was applied to 17 local government representatives, individual employers and industries, while 4 FGDs to RMWs and 3 FGDs to entrepreneurs of specific occupations. Based on the collected

data, skills gap (skills learnt by returnee migrant workers in destination countries or skills training they were interested in and skills demanded by local job market in Nepal) and numerical gap (additional skilled human resources demanded by local job market) were identified based on which

conclusion was drawn and recommendations made for the report.

Likewise, 10 in-depth interviews were carried out with the related employers' associations like Hotel Association of Nepal, Contractors' Association Nepal etc or large construction companies in order to explore the demands of specific occupations in the construction and tourism sectors in the particular districts. Such interactions were also zeroed in on exploring the trends of human resource demand for at least three years.

Limitations of the Study

Since it was difficult to reach all the employers and entrepreneurs of targeted seven districts individually- due to the

limited time and resources, major key informants were identified and approached for data collection as mentioned in the table 1 as per the thrust of RMA. There were only 35 days available for the surveyor including report writing. Analysis, interpretation, conclusion and implications are based on the responses received from only the identified key informants. However, the validation of finding has been carried out through the triangulation of the data from secondary source and the surveyor's own observations, notes made during the survey.

Major Occupational Sectors

Based on the primary and secondary data collected from different sources and analysis of collected data, the following are the major findings of the rapid market appraisal:

Table 2

Distribution of RMWs by their Occupational Interests and Training

| Sector | Occupational interest | No. | Percentage |
|--------------------|------------------------------|-----------|---------------|
| Agriculture | Village Animal Health Worker | 8 | 27.59 |
| | Fishery Technician | 7 | 24.14 |
| | Banana Farming Technician | 4 | 13.79 |
| | Vegetable Producer | 6 | 20.69 |
| | Herbal farm worker | 4 | 13.79 |
| | Sub-Total | 29 | 100.00 |
| Construction | Aluminum Fabricator | 8 | 18.60 |
| | Furniture Maker | 6 | 13.95 |
| | Construction Carpenter | 5 | 11.63 |
| | Plumber | 4 | 9.30 |
| | Electrician | 6 | 13.95 |
| | Mason | 4 | 9.30 |
| | Welder | 4 | 9.30 |
| | Plasterer | 2 | 4.65 |
| | Scaffolder | 4 | 9.30 |
| | Sub-Total | 43 | 100.00 |
| | Tourism | Cook | 4 |
| Tourist Guide | | 2 | 18.18 |
| Waiter/Waitress | | 3 | 27.27 |
| Housekeeper | | 2 | 18.18 |
| Sub-Total | | 11 | 100.00 |
| Grand Total | | 83 | |

The Table 2 depicts the occupational interests of RMWs in which they want to be trained. It was found that the positions of Village Animal Health Worker, Fishery Technicians and Vegetable Producers belonging to the agriculture sector were most liked, whereas 13.79% of the respondents recommended for Banana Farming and Herbal Farmworkers.

Similarly, in the construction sector, the positions of Aluminum Fabricator, Electrician, Furniture Maker, Construction Carpenters, Scaffolder, Mason and Welder were found to have been sought-after by a majority of the RMWs. The occupation of Plasterer was liked by the least number of respondents i.e., 4.56%. Meantime, in the tourism sector, the positions of Cook (Nepali Cuisine), Waiter/Waitress at 27.27% and, Tourist Guide/ House Keeper occupations were found to have been preferred by 36.36%, 27.27% and 18% of the respondents respectively,

Out of the total participants, 95% (83) RMWs wanted training to enhance their skills and secure jobs. Among them, around 50% had chosen the construction sector, 35% (29/83) opted for the agriculture sector and the rest 15% interested in joining the hospitality sector. The IOM (2020) and RERP (2020) had mentioned that agriculture is mostly demanded sub-sector by returnees. However, in the case of Madhesh Province, construction and agriculture are the first and second most in-demand sectors respectively among the returnee migrant workers in terms of profession. Only 15% RMWs were found interested in the tourism sector.

While interacting with the RMWs using FGD and KII methods, it was found that around 70% of the total workers did not have

any specific skills learned in their respective destination countries and the general skills acquired by them in such countries were not applicable in the context of Nepal. Out of the remaining 30%, whose skills were partially matched, a majority of them reported that they were not engaged in any profession due to the low remuneration offer or the inability to invest in self-employment or enterprise development.

Demand Analysis

This section analyzes the most in-demand occupations as responded by the employers in the form of key informants under each of the sectors.

Construction Sector

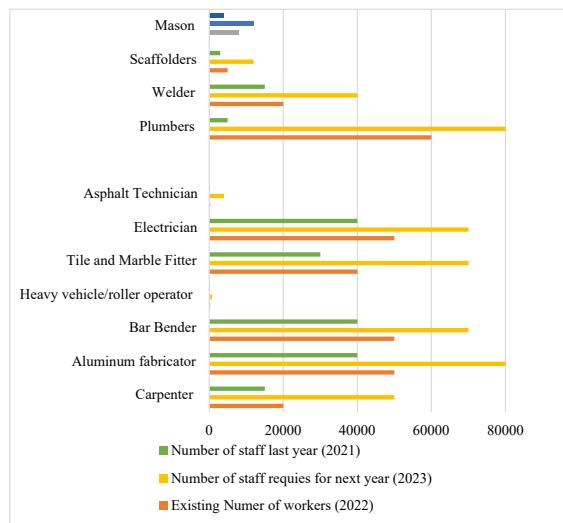
Since infrastructure development is the basic indicator of the holistic development of a country, both the central and local governments have accorded high priority to the construction sector. All the visited representatives of rural municipalities emphasized that the infrastructure development had been the foremost priority for the last one year and would continue to remain so for some more years to come. The following table depicts the information or data collected from the major respondents from key informants under the construction sector, including government representatives.

Figure 1 shows the trend of human resource requirements for three years. It depicts that the demands for most of the construction sector occupations are constantly on the upward trajectory. Such occupations pertain to plumbing, aluminum fabrication, electricity, bartending, asphalt technique,

heavy equipment operations, etc. It was found that a big majority (more than 90%) of the existing Asphalt Technicians are Indian workers and that they should be replaced by the Nepali ones.

Figure 1

Most Demanded Occupations (Construction)



Moreover, employers also further recommended that the trained youths should be competent enough by possessing various skills related to marketing, communication, etc. in addition to positive attitudes. The prime reasons behind the huge demands for the human resources of the construction sector as highlighted by the respondents were due to the infrastructure development plans of the provincial and local governments in the Madhesh Province as well as the frequent turnover of the staff. The following plan of GoN also contributes to the additional human resource demand in the construction sector:

- Fast Track (Kathmandu to Nijgadh) is undergoing;
- International Airport at Nijgadh is under process;

- The railway line is going to be expanded;
- Numerous road construction and irrigation canals have been planned.

The local government agencies like rural municipalities were found to have their own infrastructure development plans pertaining to local roads, irrigation canals, health posts, hospitals, municipality buildings, etc. Thus, a huge number of skilled workers in the construction sector is required. However, the demand of masonry is comparatively lower due to lack of earthquake resilient skills they lacked, and needed additional skills on existing workers.

The figure 1 also shows that a huge number of skilled workers in the construction sector is required for the year 2023. It shows the demand for construction workers is increasing constantly.

Regarding the bitter fact of Nepalese industries, it is noteworthy to mention the statement of a CCI official of Bara:

Around 75% of skilled workers hired by the industries in industrial corridor of Bara and Parsa districts are from out of the country- mostly from India. Owing to the behavioral or attitude related problems of the Nepalese workers coupled with the undue political influence of their trade unions, the employers are found reluctant to employ such workers in the industries. The factory owners believe that if they employ the Nepalese workers, it may result in strikes, padlocking of the industries, etc., thus hampering the entire manufacturing process. So, it was the demand of CCI that there should be only one professional trade union and the GoN should have a separate policy of

barring the workers from involving in any political parties or trade unions.

Likewise, NYEF official in Parsa mentioned:

Most of the youths in the informal sector are paid less than the minimum wages fixed by the GoN, so they get frustrated and, after getting some experience, move to another employer. This has led to the high turnover among the staff- a major problem being faced by the employers.

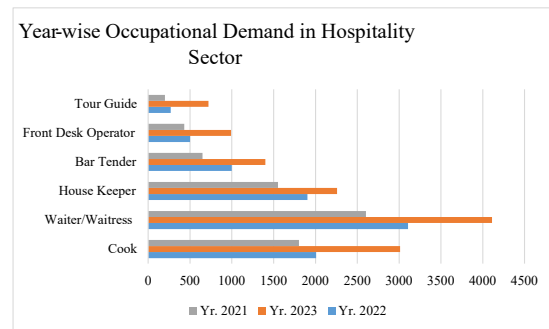
Both representatives from the CCI and NYEF mentioned that there is no any incentive mechanism for the entrepreneurs and industrialists rather private sector has to pay much tax without getting any subsidies from GoN. They recommended that if GoN wants to encourage returnees to retain in the country engaging them of self-employment or enterprise development, they should provide subsidized loans and tax exemption for processing machine, tools and equipment while importing from other countries. Though GoN has provisioned tax exemption policy and subsidized loan issue policy for agro- based enterprise, there is a huge gap in implementation of policy. Moreover, GoN and political parties of Nepal have to stop politicizing industrial workers so that their focus will be on their work rather than involving in political strikes. For this purpose, existing labor law needs to be revised to have only one professional trade union rather than having political party-based trade unions.

This statement alone indicates the need of policy level intervention as well as soft skills training for the workers to develop positive working attitude for the job and this is also equally important to enforce the minimum wages set by GoN even in informal sector.

Hospitality Sector

Figure 2 depicts the increasing occupational demand under hospitality sector as responded by the concerned key informants.

Figure 2
Most Demanded Occupations (Hospitality)



Based on the responses received from the Hotel Association of Nepal (HAN) as well as small entrepreneurs of the hospitality sector, as shown in the above chart, it was found that the occupational positions like Cook, Waiter/Waitress and Housekeeper were demanded much, while demand of tour guides, bar benders and front desk operators are also recommended in hospitality industries. Because of the priority of local government to develop tourist destinations, the demands for skilled human resources in all the above-mentioned occupations are on the rise. Among the various occupations in the service sector, the demand for Waiter/Waitress is projected to be the highest in the next year. Overall, based on the collective responses from key informants under hospitality sector, there will be a huge demand of workforce in the hospitality sector in the next year due to systematic development plans of the tourism sector proposed by both the private sector and local government. The local government, in particular, also has termed tourism as

one of the priority sectors in the planning documents.

Agriculture Sector

There are 6,561 agro-based small enterprises/ domestic industries in Madhesh Province (RERP, 2021) underdoing the scarcity of trained technical human resources. This is highlighted as a critical gap in the sector. Major agro-based products of the province, among others, are fruits, such as mango, pineapple, guava, papaya, etc, and crops like wheat, paddy, sugarcane, etc. Similarly, other such products include fish, oil products, and spices.

In the Madhesh Province, traditionally operated markets termed as *hatbazar* are the places for the smallholder farmers to sell their agricultural products. However, such markets are too unsystematic to provide equal opportunity for all farmers to sell their produce. Thus, modernization and commercialization of the existing traditional mode of agro production is very important linking them with the markets. As mentioned in the Provincial Profile of the Madhesh Province, 45% of the total fruit production in Nepal belongs to this province. Notably, the mangoes produced here account for some 70 percent of the total production of this kind of fruit in the country.

Banana is another fruit in the province that has a high potential. However, establishing fruit processing plants here for enterprise development is important as opined by the agriculture experts during the RMA.

The Madesh Province is a valuable commercial arena for both large and small market centers. This is so because of its

geographical structure, easy access to road networks, proximity to large market centers, including the highly populated cities of the neighboring India. However, to make agro-enterprises successful, the prime challenge is to face the harsh competition posed by the Indian agricultural products supplied largely by using modern technologies and in cheaper prices. Respondents from the local government and entrepreneurs emphasized that entrepreneurial knowledge and skills, and heavy use of technologies in agriculture production and processing should be the priority of all levels of GoN to integrate the returnee migrant workers. Those returnees with skills have an equal opportunity of replacing the Indian-dominated labor market.

Nepal has 24% of its total national land on an average appropriate for agriculture production while the Madhesh Province alone has 61% of its total land appropriate for agriculture production as stated in the Province Profile of Madhesh Province. Moreover, 63% of the wetlands in Nepal on an average are appropriate for agro- forestry while the said province alone has 94 percent of its total wetlands suitable for the same.

The province accounts for more than 33% of the total vegetable production in Nepal and its provincial productivity is also more than the average national productivity. The province's share in the total national production of milk stands at 17 percent. It has a 57% contribution to the total national fish production, a 41.67% contribution to the total cash crop production and a 20% contribution to the major crop production from Madhesh Province. (Provincial Policy and Plan, 2077)

During the interaction, one of the local Government heads, stated:

Agricultural land isn't the problem; the problem is the agricultural system. In this system, developing pocket area with mass production with market-based products ensuring market system is necessary. For example, we have developed all chains of fishery supplies from hatchery to fish farming and market for sales, and developed this municipality as a fish cluster. Dhanusha is enormously potential for fostering entrepreneurship in agriculture as well tourism. After assessing whether the returnee migrant workers are willing to start their own business or get job, preparation needs to be done accordingly, opportunity is enough for them.

Likewise, the Sub-Sector Analysis Report (FNCCI, 2021) recommended the following occupations as demanding occupations in agriculture sector at national level:

1. Fruits and vegetables processor
2. Dairy plant operator
3. Meat and fish processor
4. Tea and coffee processor
5. Agronomical grain processor
6. Herbal processor
7. Spices processor
8. Agricultural input supplier
9. Junior technical assistant (JTA)
10. Agricultural credit service provider

During the interaction with entrepreneurs in Dhanusha, Siraha and Saptari, it was found that fish farming was the most successful business for the farmers. Likewise, poultry farming was also a lucrative occupation in Bara, Parsa, Dhanusha, Siraha, and Mahottari. During the FGD and KII with local government representatives, it was found that poultry farming and fish farming

had changed the farmers' lives along with their living standards. In the same way, mango production in Siraha and Saptari is also a very attractive seasonal business in eastern Madhesh. One of the entrepreneurs during FGD in Dhanusha mentioned:

I have done fish farming in 3 bighas of land investing NRs 400,000 for the preparation of the pond and all the expense incurred for fishery including the cost paid to the hatchery. Entire expenditure incurred for fish farming was NRs.280, 000 for a year, including the cost of wages paid to regular staff for maintenance and farming as well as seasonal staff for catching fish. The net income I made from fish farming was NRs.120,000 in a year, excluding some fish that we consume at home for personal use. I have also created a regular job for 3 staffs and a seasonal job (fish catching) for ten people (since I have to pay 10% of the total cost of fish to the fish catchers- a group of ten).

The estimation of cost and profit was verified by another respondent of FGD, who invested NRs 1 million for acquiring nine *bighas* of land and preparing a pond for fish farming who spent around NRs 600,000 for all the expenditure incurred with net profit of NRs, 400,000 within one year and three months period.

Thus, the agriculture sector in the Madhes Province has profound potential for self-employment and job creation through enterprise development. Based on the interaction with the respondents, the following occupations under the agriculture sector are found demanded most by the market in Madhesh Province :

1. Poultry Farming Technician
2. Village Animal Health worker
3. Fishery Technician
4. Community Livestock Assistant
5. Organic Vegetable Producer
6. Banana farming Technician
7. Fruits Processor
8. Herbal Processing Technician.

Conclusion and Implications

Conclusion

Based on the interaction with returnee migrants regarding their occupational interests responses received from different market players and local government representatives, the 24 occupations are found as the most demanding ones. Nine occupations are under the construction sector (plumber, building electrician, aluminum fabricator, house painter, asphalt technicians, construction carpenter, scaffolder, heavy equipment operator), seven under hospitality sector (cook, waiter, waitress, house keeper, tourist guide, bartender, front desk operator, barista maker), and eight under agriculture sector (poultry farming technician, village animal health workers, fishery technician, community livestock assistant, organic vegetable producer, banana farming technician, fruit processor, herbal processing technician).

In order to make reintegration program of returnee migrant workers more effective, the government and private sector have to join hands together providing technology supports based on business plan, credit linkage facilities for business, skills enhancement training and making the market system effective by developing pocket area for agricultural produces and other products.

Local Government exercising the power of monitoring and regulating vocational skills development training as mentioned in the constitution and Local Government Operational Act 2017, should develop strong mechanism to maintain quality of training and avoid duplication of resources. An institutional and policy level arrangement should be in place with the provision of business counselling, incubation training, market system development and support services. Effective implementation of National Education Policy, 2076 and National Vocational Qualification Framework for credit banking and credit transfer of skills acquired by skills holders are also felt. Strong coordination among Enterprise Development Facilitators (appointed by municipalities with the support of MEDPA/UNDP), Migration Resource Centers, focal persons of TVET program (Social Development Officer) and Employment Coordinator under PMEP within municipalities needs to be established.

Implications

Implications to Training Providers

Training providers were largely found going for less expensive common trades to impart training rather than providing training based on market demands which contributed in decreasing rate of employment of skilled graduates. Thus, training providers need to design training based on the demands of market, focusing more relevant market-based technology and skills in close coordination with local government, migration resource centers, and support service providers.

Implications to Local Government

Ensuring quality of vocational skills training and regulating the training is the

constitutional right of Local Government, so regular monitoring of the activities performed by different private sector training providers and other projects need to be done from planning phase so as to avoid duplication of resources and conduct training based on market demands in close coordination with market players. It can be done also by developing bench mark indicators for quality of training in major occupational sectors. It is also necessary to see whether the proposed training are against the human resource plan of the municipality as well as skills demanded by the local market. Moreover, having an effective database of skilled workers and potential unemployed youths, migrant and returnees, migrant workers as well as local employers would be helpful to effective labour market information system (LMIS) within municipalities.

Implications to Policy

The capacity of local government officials needs to be developed by implementing capacity development policy in the wake of restructuring of GoN under the federal system, particularly in exercising the rights ensured by the Constitution related to vocational skills training, managing databases, monitoring skills training and other economic activities, business counselling and business development supports defining the pocket area for agro-based products and agro-enterprise development, management of market Information systems (MIS), etc. GoN through MOLESS should initiate to amend labor policy, act, and bylaws to have only one personal trade union rather than party-affiliated trade unions to motivate industrialists to employ Nepali skilled workers. Another lack found in the effective

implementation of National Education Policy, 2076 was that National Qualification Framework for credit banking and credit transfer of skills acquired by individual skilled holders is to be done to encourage skills holders and facilitate them with job opportunities.

Implications to the Project

While designing a training plan for a project, consultation with various market players support service providers and local government is imperative. Training and employment service providers need to be selected in applying transparent procurement policy, and budget of training needs to be proposed considering quality of training.

Implication to Entrepreneurs and Skills Holders

Focus on entrepreneurs and skills holders is essential to enhance their skills and developing their expertise on particular occupations rather than testing different occupations in the name of training opportunities or business opportunities. It was reported during the FGD that one of the skilled graduates has different twelve certificates of level one training in various occupations, but he is still struggling for the job. It has the implication that the person should sharpen the skills and knowledge by upgrading the same skills rather than roaming around for other opportunities. However, having multi-skilling within the same sector would also be better for sustainable employment.

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Article

TVET Sector Strategic Plan, 2023-2032: A Drive to Success

Hari Prasad Lamsal^{*a} and Anil Muni Bajracharya^b

^aMinistry of Education, Science and Technology (MoEST)

^bCouncil for Technical Education and Vocational Training (CTEVT)

Abstract

The technical and vocational education and training (TVET) sector faces a number of challenges, including declining enrollment, supply-demand disparity, and quality and relevance concerns. These issues may be addressed through a strategic plan that focuses on improving the quality of TVET programs, strengthening governance, managing the sector, and increasing enrollment and participation. The three-phase 10-year plan this article dwells on is expected to pave a path for addressing these challenges so that the TVET sector would take a right direction. The first phase could focus on laying the foundation for a more effective and efficient TVET sector, including investment in infrastructure and technology, development of governance and management systems, and improvement of program quality. Similarly, the second phase could focus on expanding access to TVET programs and increasing enrollment, while the third phase could focus on consolidating the gains made in the first two phases and making further improvements in the TVET sector. The authors of this article conducted a desk review and engaged with various stakeholders to gain a comprehensive understanding of the challenges facing the TVET sector in Nepal. By identifying the current challenges and exploring the way forward through the 10-year plan in three phases, the article contributes to the development of a comprehensive and effective solution to the problems facing the TVET sector. Overall, the article highlights the importance of a strategic approach in Nepal. The comprehensive approach with phase-wise attention and engagement is to bolster the TVET sector, thereby making it a strong and effective source of economic growth and prosperity in the country.

Keywords: technical and vocational education and training, TVET sector strategic plan, TVET governance, enrollment, human resource, benefits of education

Context

The technical and vocational education and training (TVET) sector plays a crucial role in providing individuals with the skills, knowledge and attitude necessary for gainful employment, which in turn can drive economic growth and prosperity

(Sharma, 2021). By offering hands-on, practical training in a variety of industries, TVET programs can help close the skills gap and meet the needs of employers for a skilled workforce. But, there are some challenges facing the TVET sector in Nepal

*Corresponding author. Email: hlamsal@gmail.com

which range from declining enrollment and concerns about quality and relevance (Sharma Neupane, 2020), difficulty in placing graduates in jobs, inadequate coordination with the private sectors, poor linkage with the markets (Lamsal, 2021), ‘top-top approach’ to policymaking evading citizen participation (Dhakal, 2019), and lack of research-based action plan to address the unemployment gaps (Parajuli et al., 2020). Addressing such host of challenges will require a comprehensive approach, including the development of a TVET Sector Strategic Plan (TSSP), investment in infrastructure and technology, and collaboration between government, industry, and educational institutions. The strong and effective TSSP is essential for economic growth and prosperity in Nepal. With the right investments and strategies in place, TVET programs can help to meet the demands of a rapidly changing world of works and equip individuals with the skills and knowledge necessary for successful careers.

The shift towards skills-based education, driven by technology and market demands, is a trend dominating the world for long. It is important that the Nepali education system adapts to these changes to ensure that students are equipped with the skills needed for gainful employment.

The goal of becoming a prosperous nation by 2026 and a developed nation by 2043 is ambitious, but achievable with the right investments and strategies in place. Developing a competent and relevant technical workforce is a critical component of this effort, and a well-planned TVET sector can play a key role in achieving this. Overall, it is important to prioritize the development

and improvement of the TVET sector in Nepal in order to ensure that it would be able to meet the demands of a fast changing world and contribute to the country's overall economic growth and prosperity with well-planned TVET Strategic Plan.

This article discusses the basis of the desk review of TSSP and interaction with different stakeholders. It further underpins the current challenges of the TVET sector and the way forward with the 10-year plan in three phases.

Education and Human Resources

There are several benefits of education. Broadly, the benefits of education to the individual are categorized as private and social (Chavoshi & Hamidi, 2019). Similarly, it can also be termed as monetary and non-monetary (Lamsal, 2014). Education can equip individuals with knowledge and skills. But, nature and types, and levels of education will have different impact on individuals while developing knowledge and skills.

The UNESCO (2012) explained the purpose of education into five pillars, which are as follows:

- Learning to know
- Learning to do
- Learning to be
- Learning to live together
- Learning to transform oneself and society

The UNESCO Global Monitoring Report highlights the function of education to develop skills within the individuals under three broader categories, i.e. foundational skills, vocational skills and transferable skills (King, 2009).

The middle level human resources are considered the backbone of economic activities. It helps individual engage in jobs in the market. It is directly linked with the self-employment and employment which are the ultimate objectives of the TVET system. But, TVET only may not be able to produce such human resources because other components of the education system-entire ecosystem- should also be favorable for the quality education.

Historical Development of TVET in Nepal

The formation of the TEVT apex body was a gradual process that took several years to come to fruition. The introduction of vocational education in the main stream of the National Education System's Plan (NESP) in 1971 was a significant step towards the vocational education in Nepal. Despite the withdrawal of the NESP ten years later, the impact of vocational education had already been made and a separate wing was established within the Ministry of Education to continue developing technical and vocational education and training (Belbase, 1999). This wing was further strengthened with the creation of the Technical Education and Vocational Training Directorate. The CTEVT Act was enacted in 1989 and provided the organization with autonomy to serve as the umbrella organization for the technical and vocational education sector in Nepal (Gajurel, 2010).

The history of TVET as a formal system is relatively recent, spanning less than 50 years. However, the transfer of skills and knowledge in this field has been going on informally for centuries- passed down from generation to generation as a vital part of human civilization. Despite this rich heritage, TVET

is often perceived as a second-choice option for students who struggle academically or have dropped the traditional education. Some traditional skills are still highly valued and practiced in the communities, leading to low enrollment rates for corresponding TVET courses (MOEST, 2023).

Nepal has a long history of practicing technical and vocational skills with some arts, crafts, and architecture renowned in the region since ancient time. From this perspective, the development of TVET in Nepal can be divided into several time periods.

TVET in Nepal at Present

TVET in Nepal is understood in different perspectives. Even government entities do have different understanding on it. Such understanding ranges from short term vocational training to the higher level technical education. Both training and education are stressed as essentials of the TVET. It is neither only training nor only education in theoretical sense. But, people used to explain TVET in a narrower sense by linking it mostly with the training (Sharma et al., 2021).

TVET is evidently an integral component of larger education system. It is a major part in the overall system. It remains in a blended manner from non-formal to school education to the higher education. Even continuing education can also include some of the nature and characteristics of the TVET.

As per the level of skills of an individual and ability to perform, technical human resources can be categorized into four levels: lower level skills developed from short term

training, mid-level skills developed from secondary level technical and vocational education, higher level skills developed from higher technical education and professional skills developed through professional courses.

TVET, specialty, can be categorized into four types as it helps to produce the skills in the persons.

- 1) Short-term training: lower level life relevant skills
- 2) Middle level skills: through secondary level education
- 3) Higher level technical skills: through higher technical education
- 4) Life relevant professional skills or soft skills- through professional courses

The more these skills integrate the more the nation gets human resources in an efficient and effective manner. Therefore, integrated and harmonized system is necessary to fulfill the need of qualified human resources in the economy and country as a whole.

In Nepal, different ministries, non-governmental organizational and private sector entities are involved in running TVET programs. After federalization, two more layers- provinces and local levels- are also added in the list of TVET providers (Caves & Renold, 2017).

Issues and Challenges of TVET in Nepal

Issues and challenges in TVET sector broadly are categorized into access and equity, quality and relevancy, transferability and permeability, governance and management, co-ordination and integration. Such categories are however not sole categorization. The

fundamental question is to what extent we have access to TVET program; to whom TVET program or who the target groups are;. Whether these programs are made available in all rural municipalities (753 palikas) or whether these programs are made available to the specific target group.

The CTEVT annual report revealed that only 51% seats of total quota (enrollment capacity) are fulfilled (CTEVT, 2022). If available seats are not fulfilled, expanding the number of institution or increasing enrolment quota may not be justifiable. The low enrolment in the existing program certainly warrants an in-depth analysis. Without considering all these issues, only explaining the number of institution and program may not add value in the TVET system.

The second consideration in the TVET sector is who the target groups of the program are. Without knowing them, mass enrollment will not certainly provide benefit to the individual and system. Mass enrolment may consume the quota of the actually needy group or people.

Third, the strength of the TVET program is to enhance students of the necessary skills that can fit the market. In order to enhance students with such skills, lab, facilities, equipment and practical exposure in the institution should be strictly ensured. At present, most of the institutions do not have lab and equipment facilities during the hands-on practice which has adverse impact on quality of the graduates.

The graduation rate of the TVET program is about 49% of the enrolled students (CTEVT, 2021). Such graduates may not have required skills and competencies because of not

getting chance to carry out ample practicum in their institutions. Because of under or quack competences, market may not be interested to employ them, and they are not confident to start their own business as self employment.

Fourth, the shortage of instructors is also evident. MOEST (2023) found that on average, there were only 4 instructional staff members per institution in the Pre-diploma program, compared to the required 5. The availability of instructors per Diploma program was 6.13 against a requirement of 10. This shortage is seen in most programs and the lack of required number of instructors is a concern. Additionally, the current state of the instructors' occupational skill upgrading and industry exposure is far from satisfactory level.

Fifth, monitoring of the program at present is carried out on ad-hoc basis which may hardly provide support to the teachers and institutions for the quality of TVET. The in-house monitoring and within the institute or self evaluation and monitoring is almost missing because of the absence of such culture.

Sixth, there is fragmentation and uncertainty in the career path due to the lack of legal provisions. Every institution tries to implement more programs to expand its coverage, which negatively affects the development of specialty-focused institutions. Running several programs in a single institution eludes not only integration with the market, but also workplace learning opportunities and qualified instructors. The weak linkages with higher education institutions also prevent graduates from pursuing further studies. No tertiary

education programs have been established in the TVET sector though the NVQF outline has been passed by the government.

Seventh, poor linkage with the industry and business sector (Caves & Renold, 2018) hardly brings institutions and business in the same platform, as TVET demands both workplace and classroom learning. Dual VET apprentices are exemplary model of linking industry to institute.

What Next?

The central question is- to what extent does harmony exist among these TVET actors? One of the best ways to enforce strong harmonization is through the establishment of a comprehensive TVET Act that clarifies the roles and mandates of all actors, reducing overlap and duplication. Revisions to the existing CTEVT Act may not be sufficient to bring harmony to the actions of federal, provincial, and local institutions and actors. A comprehensive TVET Act that coordinates the roles of all actors and guides their actions is desperately needed in the country.

In addition, we also need to envision the future of TVET. What should it look like? How should we proceed? What actions should we implement? How can we establish strong linkages with industry and business? How can we generate the necessary resources? How can we bring all TVET actors under a common framework? How can we create synergies in their actions? These and similar questions need to be discussed for the quality and relevance of TVET. In the wake of these pressing concerns, MOEST plans to prepare the stakeholders and develop a comprehensive action plan under an umbrella framework.

Need of TSSP

In Nepal, TVET has institutional set-up, budget, programs, mandates, employees, and networks. With strong commitment and dedication from the TVET providers, enrolment can be easily increased; teaching and learning can be improved; the pass rate can be increased; and the partnerships with the private sector can be strengthened.

The following tasks should be given priority in order to bring reform to the TVET sector:

- Restructuring of existing programs, including revision of the curriculum to align with market demand, expanding and scaling the dual TVET apprenticeship program, and making short-term skill development programs effective under the leadership of the local government. Expanding the coverage of the skill testing program is making it accessible to those in need. Removing existing barriers is equally imperative.
- Formulating a new plan for the TVET sector to develop a unified and integrated TVET system in the country by bringing the private sector to the forefront and coordinating with the provincial and local governments. This requires new acts and provisions.

To integrate and harmonize the actions of all actors, there is a need for a comprehensive plan that can guide everyone. A 10-year strategic plan, the TVET Sector Strategic Plan (TSSP), would bring the desired output and outcomes in the sector and act as a guiding framework for all, which can be operated through an annual work plan and budget.

This plan focuses solely on the development of middle-level human resources, which is the aim of technical education and vocational training. The TVET Sector Strategic Plan (TSSP) provides strategic direction for the TVET sector in the country over the next 10 years, targeting specific groups of the population and providing relevant competencies for employment in both the national and global job markets in three phases.

The constitutional mandates and the new governance structure in the country have necessitated the restructuring of both the governance and administrative systems in the TVET sector.

The TVET Sector Strategic Plan (TSSP) aims to develop strategic directions for the next 10 years with the following objectives:

- a) Provision of necessary policies, regulatory frameworks, and strategic directions for the structural and functional realignment of the TVET system to address constitutional provisions and the governance system, bringing all TVET services and providers under one-door system.
- b) Consolidation and coordination of TVET programs and activities scattered across various ministries, departments, and the private sector to improve recognition and accreditation of both the TVET services and providers in the country.
- c) Minimization of gap between the demand and supply of the workforce by responding to market needs and demand for qualified and competent workers.

- d) Partnership with businesses and industry to develop quality TVET programs and ensure gainful employment through their implementation.

Guiding Principles of TSSP

- a) Employment first – programs with high demand and employability to receive top priority
- b) Focus on short-term skilling/upskilling/reskilling programs – addressing the need of migrant workers and those needed in country
- c) Recognition and expansion of multi-stakeholder led programs – training programs conducted by various ministries, Business Industries Associations (BIAs) and others are recognized and fully accredited.
- d) TVET system restructuring in line with the constitutional mandate and market demand
- e) Vertical and horizontal expansion of qualifications and programs instead of focusing on expansion of school number
- f) Demand driven and market-led program intervention
- g) Public private productive partnership (4P)
- h) Coordination among three government levels
- i) Capitalizing the current achievements/strengths with institutions and human resources.

TSSP : Vision, Mission and Goals

There are three crucial concepts that are ingrained in the vision and mission:

- (i) The graduates of TVET must be competent and skilled, ensuring that the courses they have taken align with the needs of the relevant organizations and they are ready to join the workforce;
- (ii) The TVET system should be structured and designed to be responsive to the demands of labor market, considering the needs of business and industries when planning competencies, distribution, capacity, content, and availability of TVET courses; and
- (iii) The workforce must be trained to contribute to sustainable business and enterprise, avoiding practices that sacrifice future generations' resources for immediate benefits.

Table 1
Vision, Mission and Goals of TSSP

| | |
|---------|---|
| Vision | Skilled workforce for sustainable development and prosperous Nepal |
| Mission | To equip youths and adolescents with 21st century skills and technological knowhow in fulfilling market demands in a sustainable way for the world of work |
| Goal | To strengthen and operationalize all TVET institutions to run in their full capacity and produce relevant and competent workforce. To change the values and acceptability of technical and vocational education programs in the country. |

Source: MOEST (2023)

Components of TSSP

There are four key components associated with this change: (i) Equitable Access; (ii) Quality and Relevance; (iii) Governance and Management; and, (iv) Coherence and

Transferability. The following objectives and strategies are extracted from the TSSP (MOEST, 2023).

Table 2

Equitable Access (Component 1)

| Objectives | Strategies |
|--|--|
| 1.1 Running TVET institutions and programs in its full capacity | 1.1.1 Strengthening TVET programs and institutional capacity |
| | 1.1.2 Establishing hostel facility for needy people. |
| | 1.1.3 Introducing multi shift instructional learning environment (ILE) for 'flexible learning' opportunity. |
| | 1.1.4 Establishing multi entry and multi exit education structure for enhancing access so as to include work needy learners for 'flexile learning' and 'earning while learning'. |
| 1.2 Introducing multishift instructional learning environment (ILE) for 'flexible learning' opportunity. | 1.2.1 Prioritized and focused expansion of TVE institutions/programs as per geographical and demographic needs. |

Table 3

Quality and Relevance (Component 2)

| Objectives | Strategies |
|---|--|
| 2.1 System strengthening | 2.1.1 Operationalizing the accreditation system |
| | 2.1.2 Developing a Curriculum (DACUM) is institutionalized as a system, curriculum review, revision, and development |
| | 2.1.3 TVET M&E system is strengthened and linked with LMBIS |
| | 2.1.4 Enhancing skills testing and assessment system |
| | 2.1.5 Strengthening institutional capacity in assessment/ examination system (OCs) |
| | 2.1.6 Increasing number of Sector Skills Council (SSC) |
| | 2.1.7 System is developed for instructor's capacity building |
| 2.2 Institutional strengthening (Support and establish operational norms and standards in all schools/institutions) | 2.2.1 Provision of adequate and quality instructors as per curricular requirement |
| | 2.2.2 Reducing instructors' turnover - review and reform benefits and conditions of services of instructors |
| | 2.2.3 Learning environment in school/institutions are improved, including lab facility |
| | 2.2.4 Learning standards and curricula are revised based on NVQS level descriptors |
| | 2.2.5 Instructors' capacity development |
| 2.3 Improving quality and relevance of TVET programs - both short and long-term programs | 2.3.1 A comprehensive review and revision of TVET programs in collaboration with BIAs and other stakeholders. |
| | 2.3.2 Enhance cross-fertilization in ILE (??) through ICT based distance/virtual learning and e-learning resources |
| | 2.3.3 Widening workplace based practical training |

| | |
|---|---|
| 2.4 Continuous research and development | 2.4.1 Continuing publication of TVE sector research reports |
| | 2.4.2 Enhancing utilization of TVE outputs and outcomes |
| | 2.4.3 Increasing BIAs participants in TVET development workshops and missions |

Table 4*Coherence and Transferability (Component 3)*

| Objectives | Strategies |
|--|--|
| 3.1 Accelerating NVQS implementation process | 3.1.1 Restructuring TVET qualifications and accreditation system (ref. Strategy1.1.1) |
| | 3.1.2 Revisiting the scope and responsibility of NVQS |
| | 3.1.3 Strengthening and expansion of skills testing board including its realignment with NVQS |
| | 3.1.4 Integrating competencies learned in in/non-formal sector |
| 3.2 Standardization of certification and accreditation | 3.2.1 Ensuring recognition of TVE qualifications |
| | 3.2.2 Redefining curricular weightage in each level and in each program course |
| | 3.2.3 Level descriptors are expanded to cover and include various short-term training programs |
| 3.3 TVET Program and System restructuring | 3.3.1 CTEVT is developed as National Qualifications Authority that focuses on all technical aspects, such as skills testing, examination and certification of TVET programs in schools and higher education institutions |
| | 3.3.2 CEHRD is developed as an administrative and management body of school-based TVET programs. |
| | 3.3.3 CEHRD develops a system of coordination between and among ministries, BIAs and other stakeholders in developing nationally recognised TVET programs – both short term training programs and Pre-Diploma and Diploma courses. |

Table 5*Governance and Management (Component 4)*

| Objectives | Strategies |
|--|--|
| 4.1 Restructuring of TVET governance system | 4.1.1 TVET will be restructured to focus on technical aspects of TVET |
| | 4.1.2 CEHRD will develop a special division to focus on Management and Administration and Coordination, including making financial provisions for TVET programs |
| | 4.1.3 BIAs will be included as an integral part of the technical aspects of TVET and will be part of CEHRD's advisory body |
| | 4.1.4 MOEST will formulate a TVET coordination body, inclusive of BIAs, to work closely with the development partners to ensure adequate funding and technical assistance for this sector. |
| 4.2 Delineation and delegation of TVET functions | 4.2.1 TVET bodies will be formulated at the provincial and local government levels |
| | 4.2.2 CTEVT and CEHRD will develop Standard Operating Guidelines with specific roles, responsibilities and timeline for implementing the TSSP |
| | 4.2.3 BIAs work closely with the respective governments for collaboration and availing financial incentives to students during OJT |
| | 4.2.4 Capacity of TVET bodies at all levels will be built to perform effectively and efficiently. |

| | |
|--|--|
| 4.3 Establishment of knowledge management system | 4.3.1 An integrated /coordinated system of information management system will be in place. |
| | 4.3.2 TVE research and development capacity will be enhanced. |

Financing of TSSP

Because of the involvement of several public entities, it is difficult to capture the public resources allocated in the TVET sector. The absence of integrated account system to capture the actual allocation and expenditure made by different ministries is

visible. Likewise, the resources are spent by the provincial and local governments. The current allocation under the Ministry of Education, Science and Technology (MOEST) is as follows:

Table 6

Sub-Sectoral Federal Investments in Education

| Subsector | 2019/20 | | 2020/21 | |
|---|----------------------------|---------|----------------------------|---------|
| | Budget (NPR 10 million) | Percent | Budget (NPR 10 million) | Percent |
| ECED/PPE | 273.32 | 1.67 | 293.80 | 1.71 |
| Basic level | 6,807.28 | 41.57 | 8,497.43 | 49.49 |
| Secondary level | 2,834.84 | 17.31 | 3,313.41 | 19.30 |
| Technical education | 47.72 | 2.49 | 955.89 | 5.57 |
| Higher education | 1,763.40 | 10.77 | 1,762.44 | 10.26 |
| Non-formal education and life-long learning | 134.52 | 0.82 | 58.47 | 0.34 |
| Educational management | 4,154.07 | 25.37 | 2,289.78 | 13.33 |
| Total | 16,375.59 | 100 | 17,171.22 | 100 |

Source: Ministry of Finance (budget booklets)

Financial Estimates for TVET

Based on the proposed interventions under various performance areas explained in the above section, financial resources required to implement this reform plan has been estimated. The estimates include the total amount required in the sector to implement the proposed interventions with the sources of funding. While estimating the financing envelope, two alternative growth scenarios are considered which are expected to drive the demand for labor force in the economy (MOEST, 2023).

Scenario A: In the planned growth scenario, the government is expected to achieve the growth targets set in the Fifteenth Periodic Plan as well as projected in the Sustainable Development Goals (SDGs).

Scenario B: In the business-as-usual growth scenario, country shall economically progress in the same growth rate as has been the case for the last 10 years. In other words, in this scenario, the country's economy will grow by an average 4.6% per annum for the next ten years.

In terms of the sources of financing, nearly 60% of the cost is to be borne by public sector including federal, provincial, and local government entities

(Table 4.4). Similarly, the private sector comprising training providers, parents of the trainee students and business and industrial sectors are to contribute the remaining 40% share.

Table 7

Estimated Financing Sources for TSSP (in NRs. billion)

| Sector | Cost Center | Total | % | Short run (two-year) | Medium run (three-year) | Long run (five-year) |
|---------|------------------------------|-------|-------|-------------------------|----------------------------|-------------------------|
| Public | Federal Level | 107.1 | 14.1 | 4.9 | 37.7 | 64.5 |
| | Provincial Level | 103.5 | 13.6 | 10.7 | 36.3 | 56.4 |
| | Local Level | 240.8 | 31.7 | 20.7 | 86.1 | 134.1 |
| | Subtotal- Public | 451.3 | 59.4 | 36.3 | 160.2 | 254.9 |
| Private | Training providers | 16.4 | 2.2 | 2.3 | 4.4 | 9.7 |
| | Fee/ Parents Contribution | 291.6 | 38.4 | 17.2 | 82.4 | 192.0 |
| | Business & Industry | 0.4 | 0.05 | 0.0 | 0.1 | 0.2 |
| | Subtotal- Private | | 40.6 | 19.5 | 86.9 | 202.0 |
| | Grand Total | 759.7 | 100.0 | 55.8 | 247.0 | 456.9 |

Source: (MOEST, 2023)

Implementation Strategies: Phase-Wise Implementation

First Phase: The coordination, consolidation, and institutional capacity building of the TSSP will be a two-year initiative that focuses primarily on strengthening the institutional capacity and delivery systems by consolidating and harmonizing different service providers to operate through a one-door TVET system. During this phase, existing TVET institutions and service providers will be empowered to function in full capacity.

Second Phase: The "Gainful Results" phase of the TSSP will run for three years, primarily focusing on reducing the mismatch between the demand and supply of the workforce within the country and in global market. During this phase, TVET programs will be designed specifically to target domestic and international markets and implemented in partnership with business and industrial groups, medium and small entrepreneurs, and other social and service sectors, including the government administrative services.

Third Phase: The "Expansion of TVET Services" phase of the TSSP will run for five years, with the primary focus on expanding the reach of TVET services throughout the country and producing relevant and competent graduates to meet the projected workforce demand both domestically and internationally. This phase will contribute to the long-term vision of "*Prosperous Nepal and Happy Nepali*" by equipping young people and adolescents with relevant competencies and enhancing their opportunities for gainful employment.

TSSP Implementation: Strong Commitment of Leaders

To improve the situation in the TVET sector in Nepal, it is necessary to address the issues and problems that exist in the sector. Some of these problems are due to the inaction of existing structures and institutions, while others are related to policies and laws. It is important to distinguish between these problems and implement appropriate actions.

While new legal provisions may be necessary to bring structural changes, such as merging existing structures and programs or creating new structures, it is possible to improve the design, implementation, and monitoring of programs through the laws, policies, programs, and mechanisms.

Strong leadership is crucial to achieving results in the TVET sector. A leader with a passion for their job, institution and change can effectively mobilize the available resources. Without strong commitment from the leadership, it will be difficult to achieve results.

To make managers more accountable towards results, they need to be dedicated, passionate, and result-oriented. This can be encouraged through training, exposure, exchange of best practices and success stories, and by giving specific tasks with a specified timeframe. Automating these practices can help develop a result-oriented attitude. For example, once a task is completed or not within a given time, the system should be closed and the reports made and submitted to the higher and concerned levels to ensure accountability. Similarly, if the managers are dedicated, accountable, passionate, and result-oriented, it will not be difficult at all to move forward to the next level of reform in the TVET sector.

Conclusion

The TVET system is fragmented in Nepal largely due to non-implementation of the existing legal provisions and programs and partly the absence of new legal tools. The sector is also facing challenges with inadequate public funding to deliver quality services. There is no funding from the sources other than the public either. Harmonization is necessary in the existing programs, which requires a SWAP (Sector-Wide Approach) in the sector where the TSSP can serve as a tool to bring all actors on a common platform.

The TSSP is a ten-year strategic plan that serves as a guiding framework for the sector and aims to restructure programs, curricula, institutions, and give more power and authority to the provinces and local level. To operationalize the plan, an annual work plan and budget must be prepared and implemented.

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Article

Academic Performance of Fee Paying and Scholarship Students at CTEVT Affiliated Nursing Colleges in Nepal

Khagendra Prasad Adhikari^{*a}

^aCouncil for Technical Education and Vocational Training (CTEVT)

Abstract

The Government of Nepal through its various agencies including the Council for Technical Education and Vocational Training (CTEVT) has offered different scholarship schemes to promote nursing education. Despite the practice of scholarship in nursing education for many years, there has been insufficient studies conducted to explore and inform about the effectiveness of scholarship in nursing education in association with the students learning performance. This study examines the status of academic performance of the scholarship and fee paying nursing students and also explores their perspectives on professional values they assert for nursing profession. The study reveals that the scholarship students perform better in learning than the fee-paying students. Their educational performances are measured in terms of the frequency of library visit, frequency of reading course-related articles, duration of time spent by students on self-study (independent variables) and the marks obtained by them (dependent variable) in the first and the second year of nursing courses. The scholarship students have exceeded the fee-paying students in all of these educational performance indicators.

Keywords: academic performance, scholarship, nursing colleges, Council for Technical Education and Vocational Training

Introduction

Nursing profession is being popular among Nepali female students. The students, parents, health workers and the government have felt the need and importance of nursing education. But this education in the past appeared to be inaccessible for the target students in terms of time, space and affordability. In order to address the need, the government introduced two scholarship schemes. The purpose of classified scholarship was to address the need of making this profession more inclusive and participatory, while the purpose of intelligent scholarship was to produce competent

human resources in the nursing profession. A huge amount of money is invested through scholarship but there is no empirical evidence to prove its usefulness.

A scholarship can be taken as a program under which a financial support is offered to the needy students. It is also considered as an award for the students in their academic world. The scholarship students get a kind of recognition in their societies. If any students get a scholarship, s/he can give herself or himself a pat on the back. In some

^{*}Corresponding author. Email: khagenadhi@gmail.com

scholarship programs, there are thousands of applicants. When students are recognized for their accomplishments, it gives them the confidence to pursue their further goals. It is very important for the students to recognize their own potential early in their academic career so that they can foster its growth receiving recognition from an organization.

In Nepal, CTEVT offers three types of scholarships, which are categorized as: a) scholarship for genuine and talented students, b) special scholarship and c) classified scholarships (CTEVT, 2016). A classified scholarship is provided to the hard- up students from among women, dalit, ethnic group, martyrs family, former *kamaiya* (poorly paid tenant), *haliya* (poorly paid plough man) and disadvantages groups of people (CTEVT, 2016). Let it say equity scholarship to the disadvantaged group of people in our society.

Equity scholarships aid the students who are experiencing social or financial disadvantage. Equity is a means of social inclusion in the TVET policies, program and activities. Equity scholarship with its strong emphasis on social justice, the recent literature on education and social sciences increasingly advocate the issues of social inclusion (CTEVT, 2016). Establishing and maintaining equity in public finance is not an easy task. Sometimes it is understood as a relative concept rather than an absolute term. However, equity concept is useful to analyze education financing, which provides the merit for value judgments to determine fairness and social justice in resource allocation. It helps to analyze the education financing policies by putting them into the equity framework.

Academic scholarships reward and/or academic excellence require a high level of achievement in nursing education. The innovative and creative students can show academic excellence on his/her work. It can inspire other students to do better in a certain period. To measure the academic performance of the equity scholarship and non-scholarship nursing students of the CTEVT is considering the marks obtained in the final result taking as an independent variable. The marks obtained in the final exam shows academic and clinical competencies of the student.

The notion of academic performance and perspectives on professional values has increasingly been considered in nursing education to mitigate the international requirement and needs through quality assurance. Goffman (1959) links performance as all activities of participants which persuade other participants. Generally, a performance comprises an event in which he/she behaves in a particular way for the audience. In fact, performance is a complex term, which has many forms. For example - performance management, employee performance, academic performance, performance appraisal, performance indicator, etc.

Academic achievement is determined by the performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in school, college, and university (Steinmayr et al., 2014). School systems mostly define cognitive goals that either apply across multiple subject areas (e.g., critical thinking) or include the acquisition of knowledge and understanding in a specific intellectual domain (e.g. numeracy, literacy, science,

history) (Mlambo, 2001). The field of academic achievement is very wide-ranging and broadening in terms of educational outcomes. The academic achievement depends upon the indicators that issued to measure it. Academic performance of nursing student is shown through the academic and clinical competencies of the student in academic and clinical field.

The nursing course at proficiency certificate level (equivalent to Grade XII) is entirely a technical education in Nepalese educational stream. Technical education is being provided to people through different universities, CTEVT and its affiliated colleges. School Leaving Certificate (SLC) passed female student can enroll in proficiency certificate level (PCL) nursing program in any colleges of their choice. CTEVT has provided affiliation to more than a hundred nursing colleges till the date (CTEVT, 2016).

Every year CTEVT prepares admission directory for newcomer students to appear in an entrance examination to get new admission. In the directory, the provision of entrance examination, admission procedures and scholarship (10 percent) schemes are written clearly.

This study was conducted to examine the status of academic performance of the scholarship and fee-paying nursing students and the perspectives on professional values they assert for nursing profession.

However, the academic performance of those students with scholarship has always been the matter of research to come with the idea either there is effective rate of return or not.

In order to open the door of international job markets, this type of education is an effective

means. It not only opens the door in the labor markets but also creates job opportunities and entrepreneurship to other people. People having technical and vocational skills can easily sell their skills to national and international markets through which they can get better earning. It ultimately helps them to uplift their living standard in their society. Nowadays, it is found Australia, Canada, USA, UK and other European countries have very eye-catching plans only if Permanent Residence (PR) and working visa for the people having technical and vocational skills, specially nursing education. In the context of Nepal, the number of enrolments shows that nursing is the career subject of choice for most of the SLC graduates. As such, it is more than necessary to come with the idea whether government's investment in nursing education and its scholarship provision is being effective or not.

Nursing education is an entire professional course and nurses have to exhibit a competent skill to deliver their services in any society. And values are individual beliefs that derived from previous experiences, education, social and physical environments that are held to be true and may change over time (Lent et al., 1994).

The students of the study were studying nursing course and every college under the affiliation of CTEVT). Scholarship holder's academic performance, however, is not studied till date. Generally, people expect their academic performance to be high in comparison to other students who have to pay for the study. Colleges are expending a huge amount of money (Rs. 19,57,00,000.00) for nursing students in the name of scholarship each year (CTEVT, 2016). The effect of scholarship program on academic

performances of students with scholarship is hardly discussed in present academia. Are those students, as our expectation, doing fine in their studies? Or, are there any other social, cultural, economic and demographic factors that influence the academic performances of scholarship holder nursing students? Here, it demands an empirical study to claim whether the provision of such scholarships for nursing students is being fruitful for the nation. Nursing education basically focuses to produce skillful nursing professionals to deliver services to the people who need nursing care. Nurses are very much demanding in national and international health service market in this globalized context and they are producing rapidly to meet the global requirement. Their job is becoming more challenging day by day due to the increased expectation of people. So, it should be taken in any research that what is the nursing students' perceptions on professional values.

Moreover, it is to identify the major socio-cultural, economic and demographic factors associated with academic performance of those students. Similarly, values are considering as enduring beliefs or attitudes in persons or groups who are conducting their behavior and serve as criteria for making their own decisions (Eddy et al., 1994). It is also known that professional values are standards for action and that might be favorable to practitioners, professional groups and provide a framework for evaluating behavior (Weis & Schank, 2000).

Roles of Professional Values in Nursing

Nursing values are learnt through formal and informal means. Nursing education influences the formation and development

of professional values and identity provides different approaches to learning and developing these values. Nurses Professional Values Scale determined that nursing education does not only improve academics but also build on fundamental professional values (Harding, 2016).

Mentoring of nursing students is an important portal through which nursing values are transferred. It was found that values displayed by nursing students were developed during interactions with, and observations of the nurse educator. Faculty also has the responsibility for providing encouragement and educational support in order to promote the extraction of professional values from their clinical experiences (Bhandari, 2012). The implementation of clear codes of conduct resulted in improved professional development and noticeably higher professional values among nursing students. Nursing values influence nursing actions and serves as a guide when dealing with ethical issues. Professional values and their resultant behavior are causes for concern, with most nurses displaying very little respect for nursing values (Bhandari, 2012). Similarly, anecdotal reports from both clinical and educational nursing leaders in Jamaica indicate that attitudes and conducts displayed by a significant number of nursing students from different schools of nursing have increasingly been unprofessional (Harding, 2016).

Culture plays an important role in the development of professional values (Brown, 2002). It also influences the development and prioritization of these nursing professional values. The nursing values being the same across all jurisdictions; priority values differ according to culture. Values studied in the

Japanese and American cultures determined that despite having similar values in both cultures, each country had values that were unique to them and this was supported by another study that identified unique cultural indicators in the Japanese culture (Boss et al., 2016). In the context of Nepal, data from no objection certificate department of Ministry of Education, Science and Technology shows that a large number of students are interested for higher education on abroad.

To make students ready for the world of work by developing skilled human resources, access to education without compromising quality, provide options and accredited learning pathways for students between technical and general secondary education, strengthen institutional links and facilitate the transition to higher education, prepare students to uphold and fulfill their civic duties and ensure the acquisition of foundation skills through technical and vocational education at secondary level that will enable adolescents to acquire skill sets (MoE, 2016).

Methodology

The study is based on the survey. The population of the study were the students of PCL nursing who were studying in the second and third year in the CTEVT affiliated institutes located in the Kathmandu valley. The reason behind choosing the study area is that most of the nursing colleges are in the Kathmandu valley and most of the parents prefer to enroll their children in institutes located in the valley irrespective of location, caste and economic position. Out of 29 institutes, 19 nursing colleges were selected for the study. The total population of this study was 1249 and 303 students were taken

as the sample for the study. Out of them, 125 were studying in scholarship and the remaining 178 were from the fee paying group. The fee-paying students were selected randomly.

Findings and Discussion

The level of the academic performance of the fee-paying and scholarship students was analyzed and interpreted in terms of how often they visited library, time they paid for self-study, the frequency of reading course related articles and the educational achievements obtained in the first and the second year of nursing studies. The findings of the study are presented in the Table 1.

A majority of students were found to have visited library occasionally. Also, the scholarship students were found to have visited library more frequently than those of fee-paying students. And, hence, a significant relationship was found between the scholarship and fee-paying students and their library visit as an academic performance. In the same way, the time offered by the students for self-study was also counted as an academic performance. For self-study, the scholarship holders were found to have paid more time than the fee-paying students on daily basis. It was, therefore, found that academic performance of the students in terms of the time offered for self-study has a significant association with their type: scholarship and fee-paying students. Again, in terms of the frequency of reading articles, the scholarship students were found to have read more articles related to their course compared to the fee-paying students. Also, the scholarship students were found to have obtained more marks in total than those of fee-paying students in their nursing studies.

Table 1
The Major Finding of the Study

| Association between the type of Students and the Frequency of Visiting Library | | | | | | |
|--|--------------------------------|--------------------|------------|-----------------|-----------------|-----------------|
| Students | Daily/Frequently | Occasionally/Never | Chi-square | <i>p</i> -value | | |
| Scholarship | 68(54.4%) | 57 (45.6%) | 4.345 | 0.0371 | | |
| Fee paying | 77 (43.3%) | 101 (56.7%) | | | | |
| Respondents by their Type and the Time offering for Self -study | | | | | | |
| Students | Average Reading Hours in a day | | t-value | <i>p</i> -value | | |
| | Mean | SD | | | | |
| Scholarship | 4.03 | 2.68 | 2.7563 | 0.0062 | | |
| Fee paying | 3.25 | 1.93 | | | | |
| Association between Students' Type and Frequency of Reading Course Related Article | | | | | | |
| Reading Article related to Course from the Internet | | | | | | |
| | Often | Sometime | Chi-square | <i>p</i> -value | | |
| Scholarship | 75 (60.0%) | 50 (40.0%) | 2.513 | 0.1129 | | |
| Fee paying | 90 (50.6%) | 88(49.4%) | | | | |
| Respondents by their Types and Educational Performance | | | | | | |
| Students | Mean | Std. Deviation | t-value | <i>p</i> -value | | |
| Scholarship | 79.6922 | 4.71481 | 5.451 | <0.001 | | |
| Fee paying | 75.4412 | 7.76368 | | | | |
| Respondents by their Level of Performance in Nursing Studies | | | | | | |
| Students | Performance | | Total | Chi-square | OR (95% CI) | <i>p</i> -value |
| | high | low | | | | |
| Scholarship | 117 | 8 | 125 | 44.206 | 10(4.61-21.74) | <0.001 |
| Fee -paying | 105 | 72 | 178 | | | |
| Respondents by Learning Achievements and the Type of Scholarship | | | | | | |
| Study year | Scholarship type | Mean | SD | t-value | <i>p</i> -value | |
| 1 st year | Classified | 73.79 | 10.31 | 0.61 | 0.542 | |
| | Intelligent | 74.76 | 7.41 | | | |
| 2 nd year | Classified | 80.73 | 11.23 | 5.73 | <0.001 | |
| | Intelligent | 93.87 | 14.21 | | | |

The educational performances shown by the scholarship and fee-paying students in the first and second year of nursing studies were also analyzed and interpreted. In this regard, it was found that their educational performance has a significant association with their type: scholarship and fee-paying in the first and the second year of their nursing studies. The students learning performances

were analyzed and interpreted by the type of scholarship (intelligent and classified) they held. Based on the statistical test, the intelligent scholarship holders found to have higher level of academic performance, especially in the first and the second year of nursing studies, than those of classified scholarship holders.

The learning performances of the scholarship and the fee-paying students in theory subjects in the first and the second year of nursing studies were also analyzed and interpreted statistically. The scholarship students were found to have obtained better learning performance than those of fee-paying students, especially in the theory subjects, which are being studied in the first and second year of nursing studies. Similarly, so far the matter of educational performances in the practical subject is concerned, the scholarship students in the first year of nursing were found to have scored better marks than the fee-paying students. But their learning achievement in practical course in the second year was found to be more or less similar. On the way to measuring the level of academic performance of the fee-paying and scholarship students their annual score in each subject being taught in the first and second year of nursing was examined. The subject-wise learning performances in the part of scholarship holders were found to be higher compare to the learning performances of the fee-paying students both in the first and the second year of nursing.

Conclusion

There are two types of scholarship in nursing studies. They are 'intelligence' and 'classified' scholarship. Intelligence scholarship is provided to those who perform excellent in the entrance test or in the first- and second-year examination. Classified scholarship, on the other hand, is provided to different classified groups of students including Dalit, Ethnic, Indigenous, Madhesi, and Muslim students (CTEVT, 2016). Due to this provision, on the one hand, the students from very poor family will not be eligible to get

the scholarship but on the other, the students from very rich family will be eligible to get the scholarship under the classified scheme. Seemingly, it is not justifiable in the socio economic context. But it is the provision of law. Private investment is in a huge volume in this field and providing national and social contribution to develop the nation (Parajuli, 2013). Even they are under some blame. There is a burning need to come with empirical studies in identifying whether the investment in scholarship is being effective. As such, in identifying the effectiveness of scholarship provision for nursing students, and in identifying other socio-economic factors affecting academic performance of scholarship students, the finding of this research endeavor is likely to carry its high significance in forming national educational policy with regard to the scholarship provision for nursing students. And, it is equally significant to parents, students and college owners. Not only in scholarship, it is equally significant to determine the nursing students' perspectives on professional values.

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Council for Technical Education and Vocational Training (CTEVT)
Research and Information Division

Sanothimi, Bhaktapur, Nepal

Post Box: 3546 (Kathmandu)

Phone: 00-977-01-6636172, 6630679, 6630408, 5639451

Fax: 00-977-01-6635125

Email: research@ctevt.org.np

Website : <http://www.ctevt.org.np>