EMPLOYERS' INVOLVEMENT IN PRE-DIPLOMA TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING CURRICULUM DEVELOPMENT IN NEPAL

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Anil Muni Bajracharya

ACRONYMS

ANOVA	Analysis of Variance
BSET	Balaju School of Engineering and Technology
CTEVT	Council for Technical Education and Vocational Training
DACUM	Develop a Curriculum
GDP	Gross Domestic Product
IDM	Industrial Development Management
ILO	International Labor organization
INGOs	International Non-Government organizations
LPU	Lyceum of Philippines University
OJT	On the Job Training
SD	Standard Deviation
SMEs	Small Medium Enterprises
SPSS	Statistical Package for Social Science
TNA	Training Needs Analysis
TSLC	Technical School Leaving Certificate
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	International Project on Technical and Vocational Education
VET	Vocational Education and Training

ABSTRACT

The study seeks to answer the question/issue is how TVET addresses the job-related skills demanded by the market. In the present context, competencies are acquired based on the curriculum in the TVET. Based on the quantitative research design, this study was carried out to explore the level of involvement of the employers in the TVET curriculum design phase. The population of this study included 110 employers of the districts of Kathmandu and Lalitpur who employ the CTEVT graduates. Based on this population, the sample size of this study was estimated with the help of available formula and it was 81. The final form of the questionnaire was randomly distributed to the sampled population. The collected data were analyzed based on the frequency, mean, standard deviation, and ANOVA.

The findings of this study showed that the involvement of employers in curriculum development with CTEVT was low based on the values of means. The quantitative findings were further explored with the different stakeholders to find out the reason for the low involvement in the curriculum development with the qualitative method interviewing process expert, curriculum division director, and the employers. The qualitative findings showed that the system promotes the informal approach and personal contact to involve the employers in the curriculum development process rather than a formal approach. While in a formal approach, the employers recommend the irrelevant participants for the workshop. The employers are not aware of the benefits of the involvement in the development process as it prioritizes the short-term benefits which are not envisioned for the future. The employers hesitate to recommend the expert worker for the curriculum process as it hampers the industry's production and service.

The low level of involvement of the employer in the curriculum development shows that there is a gap in employment and TVET linkage. It shows that employers are involved in cosmetic involvement as their recommendations are not incorporated. The employers are unaware of the DACUM procedure and terms used during the workshop. TVET has to be demand-driven, not supply-driven and the employment of the graduates has to be based on the competencies demanded by the employer.

Anil Muni Bajracharya

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Technical and Vocational Education and Training (TVET) comprises education, training, and skills development relating to a wide range of occupational fields, production, services, and livelihoods (UNEVOC & UNESCO, 2013). TVET programs prepare individuals for employment in the job market through the acquisition of knowledge, skills, and attitudes (Ekpo & Onweh, 2012). Technical and Vocational Education and Training (TVET) enables individuals with knowledge and skills that help them perform their work efficiently. In other words, TVET produces technical human resources required for the labor market or industries. UNESCO International Centre for Technical and Vocational Education and Training has regarded TVET that enhances skills for employment and further learning (UNEVOC & UNESCO, 2013).

TVET primarily concentrates on fostering employment and enhancing productivity that the graduates acquire job-related specific skills that industries need. The pertinent issue is to address the demands of industries and the job-related skills that individuals acquire through TVET. These skills and competencies of the trainees are enhanced based on the TVET curriculum. The strength of the TVET system depends on the courses as per the demand of the labor market (Schnarr, Yang, & Gleibner, 2008). The quality of TVET thus largely depends on the curriculum.

Skills are the essential factors to build up competency. The industry demands proficiency in skills among the graduates so that they work efficiently. In TVET, competencies are acquired based on the curriculum. To this, the success of the TVET curriculum is measured by the achievements of graduates in industry rather than their educational achievement (Sharma, 2008). The graduates of TVET are the input for the industries. The competencies earned in technical schools should, therefore, address the demand and competencies of the market and the employers. In the context of TVET in Nepal, competencies, and skills are transformed based on the TVET curriculum. Hence, this can be reflected only through the curriculum. A sound alignment of the TVET curriculum with the demands of the labor market contributes to good curriculum quality and success of TVET.

Industry partners determine the quality and relevance of a TVET system because they are key drivers of the system and work in collaboration with the operators. We know that industries are the primary consumers of TVET graduates. Industry participation in the TVET curriculum and workplace training opportunities primarily help achieve this. According to Caves and Renold (2018), a strong "TVET system has four pillars: education-employment linkage, permeability, quality, and good governance" (p. 2). Education-employment linkage emphasizes two things: involvement of employer in the curriculum-making process (Rauner, 2009), and reference to emerging competencies according to the job market (Heinz, 2008) where an individual fulfils the required competencies for the employment. Raihan (2014) suggests that disengagement or noninvolvement of employers in the process of the planning for incorporating required skills, attitudes, and knowledge in TVET can result in graduates finding irrelevance between skills they need for the job market and skills TVET offers them. It has been one of the pertinent policy concerns in TVET. Despite high rates of unemployment

across the globe, research indicates that employers are having a difficult time finding competent workers for the available jobs in the market (Barnett, 2011).

I am involved in the TVET sector for more than two and half decades. Having known that employers are the key stakeholders of this sector, I was always curious to know whether employers take ownership of the TVET sector or how their required competencies are addressed and their level of involvement is ensured in this sector. In the context of Nepal, the employers participate in the process of curriculum development reluctantly and this keeps me striking. I was groomed and fostered in such a way that involvement of the employers is prominent for the success of the TVET but hardly such documents are available to portray the reality of the involvement of the employers, which inspired me to know the level of involvement of employers in the curriculum development.

Likewise, in the context of Nepal, the Council for Technical Education and Vocational Training (CTEVT), the TVET apex body of Nepal enrols 38,976 diploma students and 35,887 pre-diploma trainees with a total of 74,863 enrollment every year (Council for Technical Education and Vocational Training [CTEVT], 2020) but the recent tracer study in Karnali and Sudurpaschim provinces of pre-diploma graduated from 2016 to 2018 AD shows the employment of the graduates is 57 per cent (CTEVT, 2020). In the TVET sector, this level of employment of the graduates is considered lower as its objective is employment and productivity. This indicates the investment in the TVET sector is not justifiable. This indicates that the TVET institutions did not develop the competencies and skills in the graduates to meet the demands of the market and employers. Howard (2007) emphasizes the importance of designing the curriculum to develop the graduates with the real world of work and transferable workplace skills. However, the current TVET curriculum does not address this aspect of market engagement.

The technical and vocational education sector expects the involvement of industries, education experts, and practitioners in curriculum development. Industries play important role in developing and designing the curriculum that shapes the attributes of the students and shapes the competencies required of the market and industries. This helps bridge the gap between the industry and the TVET graduates and enables the students to become industry-ready.

The involvement of the industries in the curriculum development might help to reduce the time, effort, and resources spent on the trainees at industries before they enter the real workplace. Most of the institutes, as a general practice, involve industry people during their board meetings and design the curriculum with their inputs (Balasubramani, 2014). One of the objectives of the entire training centers and the institutions is to employ all the graduates of their training center in the national or global market. The engagement of the industries contributes to identifying the skills, knowledge, and attributes of future workers in the market.

The industrial sectors employ the majority of TVET graduates. Therefore, the curriculum should address the training needs of industries. Thus, the curricula are expected to address industry demands and satisfy market needs. Otherwise, it could not address competent, professionally skilled, and technologically sound trained graduates. In this regard, a mismatch between employer demands and the skills of workers is often observed. To produce well-equipped and professionally skilled graduates, the curriculum should get input from educators, the industry sector, and stakeholders (Tessema & Abejehu, 2017).

Statement of the Problem

The collaboration between technical schools and industries and employers is expected at various levels in the TVET system. However, the current discourse between these key stakeholders i.e., technical institutions and employers is not well linked in the Nepali context. The technical institutes could not produce human resources with relevant skills and competencies that employers need.

The employers are key stakeholders in the TVET sector (Baral et al., 2019) as they employ TVET graduates. Therefore, the involvement of employers in the process of curriculum development is fundamental. According to Hariprasad (2015), employers' involvement in the curriculum development process is crucial. The involvement of the employers in the curriculum development process reduces the gap between the employers and technical schools or TVET providers, thereby, reducing the risks of skills mismatch. Their involvement also helps to incorporate the competencies required by them or the labor market and prepares graduates to understand and grasp the employment opportunities.

Despite having an important contribution to employers' involvement, their involvement in the curriculum development process is often interpreted as weak in Nepal. Their' involvement both in terms of number and time was found low (Thapa, 2018). In this sense, their participation was just for the sake of validating the process with their representation. The increasing trend of unemployment among the TVET graduates is also evident that the TVET institutions are not preparing the human resource according to employers' requirements (Balaju School of Engineering and Technology [BSET], 2017).

In the past, some initiations were made to encourage employers' involvement in the curriculum development process to meet the market-driven competencies. Recently, there have been growing interactions, especially by private institutions to develop linkages with industries concerning in-service training, apprenticeship, and job placement (Thapa, 2018); however, an active role of the industry sector in curriculum input and development is still insignificant in the country. In this regard, the education-employment relationship in Nepal, particularly in the curriculum development process, is facing multiple challenges and it needs systematic effort for developing a strong TVET system through the involvement of employers. Such efforts require comprehensive studies which are not available at present on different aspects of the industry involvement in the curriculum development process in Nepal to provide a direction. In such a context, few pertinent questions that could be raised are – what is the level of involvement in the curriculum development process? What might be the reasons behind the existing level of involvement? This study concentrates on these issues and contributes to the new body of knowledge in the TVET sector.

Purpose of the Study

Based on the identified research gap, the main purpose of the study was to assess the level of involvement of the industry sector in curriculum development and the status of the involvement in terms of the number of employers and time devoted during the development in the design phase.

Research Question

Based on the research purpose, the research question was framed:

1. What is the level of involvement of the industry sector in the TVET curriculum development? What are the reasons behind the existing level of involvement?

Significance of the Study

In the competitive market, every individual seeks to upgrade himself to cope with the pace of changes (Veillard, 2012). The findings of this study help individuals to analyze the curriculum mismatch, the limits of hard and soft skills and earning opportunities of the individual and further lead to the level of performance of the industry or labor market. Second, this study analyses the curriculum development process in the TVET sector of Nepal. It unboxes the participants in the process and level of involvement of the industry sector in the curriculum development that benefits the industry sector, government organization, CTEVT, and ministries.

This study helps to find out the reasons for skill mismatch and the unemployment perspective from the institute and the sort of skilled human resource sought from the industrial perspective. The curriculum serves to bridge industry sector and institution. Therefore, the involvement of the industry sector and the ways they contribute to the process of curriculum development has been analyzed. The study and the findings help the individuals by incorporating the skills demanded by the market in the curriculum. On the other hand, This research benefits policymakers, CTEVT, and other TVET stakeholders with the knowledge of the updated status of the present context of the employers' involvement in the TVET curriculum development.

Delimitations of the Study

In this study, the development of the curriculum of the electrical pre-diploma and the industrial sector related to this trade within the districts of Kathmandu and Lalitpur has been considered. This study, in this respect, was delimited through the selection of just one trade. Also, the employers were delimited to the industry that employed the CTEVT graduates. The curriculum development has three phases such as design, implementation, and feedback, but this study focused only on the design phase.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

This chapter critically reviews the related literature to the involvement of employers in the process of curriculum development and the influential factors that affect the skill mismatch due to the low involvement of the industry sector. With the thematic literature review, the effect of each of the factors and its indicators in the involvement of the industry sector are identified. These are the highlights of this chapter. But to begin with, the concept and scope of the curriculum and the industry sector are discussed before extensively digging into extant literature of involvement of the industry sector. Further in this chapter, policy review of relevant TVET policies, discussions on theories of curriculum development and its involvement in the industry sector, and research work done in the local context are also brought into the light.

Curriculum: Concept and Scope

The curriculum is a plan of learning. It usually contains a statement of aims and specific objectives (Taba, 1962). A curriculum is a structured document that defines the philosophy, goals, objectives, learning experiences, instructional resources, and assessments comprising of specific educational programs. Additionally, it represents an articulation of what students should know and be able to do and supports teachers to know how to achieve these goals. Curriculum development is a complex task that needs a scientific approach for decision-making. It is a practical and rational system designed to collect data, determine content, standards, and instructional activities, conduct both process and product evaluation and revise to occupationally related educational programs (Badal, 2011).

The quality of graduates is assured through a scientifically designed, implemented, and evaluated curriculum. The curriculum is the constitution of an educational program. It is a systematic and scientific process of designing, implementing, monitoring, and reviewing the program. The quality and relevance of any TVET program lie in the curriculum of the training. TVET curriculum designs are suggested separately from most objectives to most subjective views such as occupational research, Develop A Curriculum (DACUM) process, Delphi technique, critical incident, function approach, personal introspection, and philosophical basis respectively. By viewing these strategies, CTEVT has been employing DACUM process/ competency-based design to develop its curricula (Mainali, 2012) and has been developing TVET curricula through different processes like conducting need assessment, identifying client group and content, preparing of data, conducting job analysis, conducting DACUM process, carrying out task analysis, compiling draft and presenting the curriculum in technical committee/ subcommittee, which is then followed by curriculum dissemination, implementation, evaluation/feedback and revision (CTEVT, Curriculum Bylaw, 1988).

The TVET institutions under or affiliated with the CTEVT are mandatorily required to follow the approved curricula. The curriculum developed by the CTEVT provides some mitigation measures of the present issues and challenges of the curricula for preparing the quality workforce as per the needs of the labor market (Badal, 2011). In a study, Mainali (2012) highlighted the importance of the

TVET curriculum emphasizing the generic skills and employability skills for immediate employment and open the discussion of whether TVET should follow the competency-based curriculum as per the demand of the market. So, a well-designed curriculum addresses the demand of the market and, to achieve this, the involvement of the stakeholders of industries in the process of curriculum design is ensured. To meet the demand of the market, such curricula are also owned by employers.

Many scholars interpret curriculum in different ways following their uses in different situations. The curriculum is a document of the planned learning process that includes the objectives of an educational program and the ways to achieve them. The involvement of the stakeholders of industries in designing the TVET curriculum enables the curriculum designers to provide the essential content. However, in the context of Nepal, we do not have adequate research on the issues of the involvement of the stakeholders of industries in framing the curricula of TVET programs. The present study was intended to bridge this gap in the literature.

Employers in TVET

TVET is intended to produce human resources for industries. TVET emphasizes knowledge, skills, and attitude development of individuals on specific occupation (Bappah & Medugu, 2013) as per the change of the pace of technology as the demand of the employers which also explains the job market. The graduates of TVET institutes are the input of industries (Raihan, 2014). Therefore, the industries employ the TVET graduates and contribute to the development of the nation. So to foster employment, the employers' demand has to be addressed and the collaboration of the industry and institute has to be enhanced.

If the TVET graduates develop the skills and competencies required in industries, employers potentially contribute to engaging pass-out graduates in the apprenticeship program, in-service training, work-based learning, and the placement of the graduates. In Nepal, employers provide in-service training (OJT) to 35,807 trainees every year; likewise, they provide apprenticeships to 900 apprentices every year (CTEVT, 2019). The evidence supports the claim that employers are the backbone of the TVET sector. Hence, the required competencies of the graduates in line with the need of the employers are to be addressed through the curriculum.

Involvement of the Employers in Curriculum Design

This part of the review discusses different aspects of collaboration and involvement of employers in the curriculum design and its implication. Hariprasad (2015) highlighted the need for the employers' involvement in the TVET curriculum development and the impact of the involvement. Since the ultimate goal of the TVET is employability and productivity, the technical schools' objectives and accountability include the employment of their graduates. The curriculum of any program must be periodically revised and ensured its relevance as per the need of the market and industry to meet the changes of the technology to reduce the mismatch of the competencies required by the employers (Teijeiro, Rungo, & Freire, 2013). So, the graduates are expected to possess the competencies required by the employers, and these competencies are reflected by the involvement of the employers in the curriculum. Further, the graduates are trained as per the curriculum.

Raihan (2014) suggests that, in Bangladesh, the collaboration of industries and institutes is a must because TVET systematically needs to link the industries with the TVET institutes. In literature, the industrial attachment with the TVET institutes is a most debated topic because the absence of adequate collaboration leads to the miss-match in the graduates' skills and competencies and the exact need of industries. To minimize the gap between industry-institute linkage and connection that enables the technical institutes to develop the human resources with the needs of industries. This is only achieved with the active participation of the stakeholders in industries in designing the curriculum.

In the words, Laguador and Ramos (2014), Lyceum of the Philippines University (LPU) seek to enhance the curriculum through the participation of multi-stakeholders like academicians, graduates, alumni as well as the industry to incorporate their requirement of skills, but the contribution of the stakeholders of industries is significant to the curriculum development as their requirement in the curriculum meets the demand of the labor market.

Likewise, a study carried out by Katherine and Renold (2018) highlighted that the participation of employers in the process of designing, implementing, and revising the curriculum of TVET guarantees the trainees that they learn competencies relevant skills and competencies of the labor market. The rate of employability of the graduates ensures the quality of a TVET institute. The curriculum reflects the rate of employment because, in Nepal, the curriculum determines the quality of training and the skills that trainees acquire to meet the needs of the market. Therefore, to meet the requirement of the market, the involvement of the employers in framing the curriculum enhances the chances of the graduates' employment because an updated curriculum addresses the needs of employers (Renold, 2018).

To restructure the discussion, first, we begin with the role of employers in curriculum design. Second, we explain what we mean by the involvement of employers in designing the curriculum process. Third, we may delete or merge repetition of similar statements e.g. claim of Caves and Renold (2018) and Teijeiro, Rungo, & Freire (2013) because they are similar.

Balasubramani (2014) highlighted that, in the modern education system, the participation of the industries is instrumental in curriculum design to prepare the students ready for industries because that reduces the gap between industry and institute by understanding the demand of industries. In his paper, he discussed industrial design among other models. In this model, the curriculum is designed to address the needs of industries and if needed some elective courses are designed in the final semester. This model is successfully working in India. The students can opt for the exams conducted by industries and get immediate placement. Most technical institutes in India involve the industries and their inputs are integrated into the curriculum. Informed with this information, the researcher observed the level of the involvement of the employers in the Nepali context.

It indicates that TVET provides training but cannot guarantee the job. Even the graduates of the world's best educational institutes are not absorbed by industries despite their skills and expectation. Thus, governments require to formulate policies that encourage employers to participate in the process of curriculum development so that the labor market absorbs maximum graduates (Okorafor & Okorafor, 2013).

In the present context "employer involvement" refers to the active participation of employers in the process of curriculum design to ensure the relevance of skills that business organizations need and the employers get right and eligible graduates. The employers can involve in the process of curriculum design by providing inputs about the skills, and their training requirements. The involvement provides placement by providing the OJT, and apprenticeship in relevant industries (Ma, 2011). Participative development, i.e. involvement of industry sectors in curricula development prevents curricula from being static (Spottl, 2009).

So far we discussed the role of employers in curriculum design linking to employment opportunities and updating the curriculum itself. However, this area is not adequately explored in the context of TVET in Nepal.

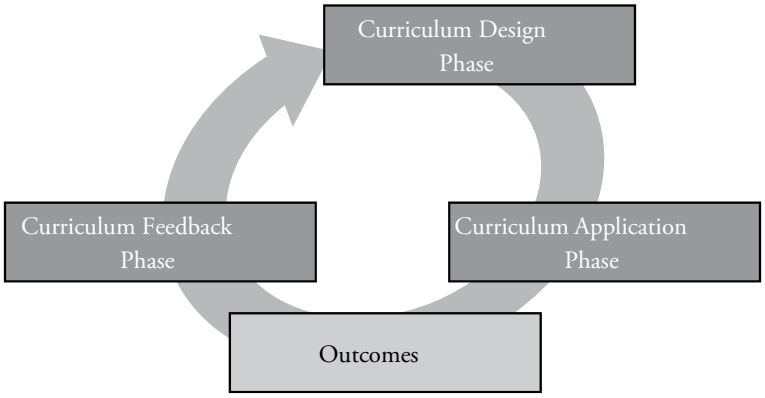
Institutional Theory

The reviewed literature reveals that institutional theory is a useful technique in answering questions to shape the role of institutions on social choices (Powell & DiMaggio, 1991). The two institutions — the educational institutes and the institutes of the employers —help to sort out the fundamental problems and work towards a function in society (Ameita & Ramsey, 2009). Although these two institutions are heterogeneous, which are structured and shaped differently, have different fundamental concerns, and function differently, they tend to have a homogeneous objective. The main objective of both institutions is to contribute to the economic prosperity of society. The educational institutes produce competent human resources required for the nation through education, whereas industries produce quality products or services through the competent human resource produced by the educational institutes.

This study is concerned with the way educational institutes and industries act and shares the responsibility for a functional society. As a correlation is assumed between the educational institutes and the employment for the common objective, this theory warns that the greater the gap between the educational institute and employer leads to lower productivity and other common problems in society. Therefore, this study is guided by institutional theory. The importance of the employer's engagement in the institute for the common goal contributes to society. Social institutions such as TVET providers or employers are developed over time and they share some features (Leslie & Clunan, 2011), and the structure, culture, and sanctions of such social institutions must be robust to function effectively (Renold et al., 2019) in society.

Curriculum Value Chain Theory

Curriculum value chain theory is based on institutional theory.



Curriculum (Source: Renold et al., 2015, p. 7)

The value chain is the established curriculum development process in the TVET. It has three phases. The first is the curriculum design phase that contains determination, qualification standards determination, and examination form determinations. The debate seeks to answer several questions. What level of employers are involved in this phase? Who is involved in the design team? Who decides the curriculum standards? Who recognizes a curriculum standard value of diploma concerning progression routes and labor market? Who pays for what? On the other hand, in the curriculum application phase, key factors are the learning place, workplace regulation, cost-sharing, equipment provision, teacher provision, career counselling, and examination. But the question is: do employers need to be involved in this phase or what level of involvement is required? In this phase, in-service training, and apprenticeship are required so that the trainees acquire practical skills with the potential employers.

The final phase is the curriculum feedback phase. This involves the information gathering and time of updating the curriculum. The concerned stakeholders determine when to update the curriculum and the process of updating it. So, the employers answer the questions because they determine when and what to update making their involvement a crucial one in framing the curriculum development (Renold et al., 2015).

Renold et al. (2015) highlight the curriculum value chain and its connection with the curriculum development process between education and employment. Employment is a critical element in developing an effective curriculum. Therefore, Renold's studies underpin the correlation of stronger linkages between education and employment systems which are highly associated with the youth labor market. The involvement and association of employers in all three phases show a high correlation with employment in the labor market. This theory helps conduct researches prioritizing the involvement of the employers in the curriculum development in the design phase for the relevant, market demand, and quality curriculum which further links with the employment of the graduates.

International Practices of Education and Employment Linkage

Ashari1et al. (2018) reveal the involvement of employers in the TVET system of Malaysia. It was a desk review study on recent issues of the industry-institute linkage in Malaysia. It showed the practices of involvement of the industry sector in developing curriculum in Malaysia. The study concluded that such an involvement led to producing highly skilled human resources. The Malaysian industries indicated their interest in supporting the TVET sector; however, the strength of actual collaboration between the industry and the TVET agency is still weak and needs to be improved. The author provides an overview of the level of industry participation in Malaysia's TVET system. The study also highlights the issues of the TVET system leading to industry engagement including the government initiatives to attract the participation of industries.

The case of Malaysia justifies the involvement of industry in curriculum development; it is a kind of collaboration. Engagement of industries in curriculum development is a form of collaboration that exists to achieve shared goals, for example by sharing knowledge, learning, and building consensus. Another aim of the collaboration is to shape the training curriculum that produces the required skills and competencies in trainees required by industries. According to Yasin, Minghat, and Saema (2013), if an institution wants its graduates to work and succeed in a career, the curriculum must address the market requirements. While Poonam (2013) stated that the collaboration between training providers and the industry must address the issues of skill requirements, international benchmarking of skill standards and competency assessment, comparability of qualifications, etc.

Based on that, this article reviewed the level of industry participation in Malaysia's TVET system but has not explored the volume of the industry sector participation. Some issues and constraints regarding the TVET system that lead to the industry engagement have also been highlighted, but the author is silent on how the curriculum development takes place in the TVET sector of Malaysia and who are engaged in the process.

Similarly, Ma (2011) explored the engagement of the employers in the higher education institutes in the Norwegian school of management. The methodology used was documentation analysis and semi-structured interviews of central participants involved in the curriculum development. It elaborated how effectively employers are engaged in the development of the curriculum and the collaboration of higher education institutions and employers in the development process. He further elaborated how such collaboration/partnership could be managed effectively for improved curriculum planning and delivery. The author pinpoints the role of the employers in the placement by providing work-based learning in nurturing stage and that academicians lead to integrate meaningful employers' inputs and balance with other stakeholders. The rapport between the academicians and employers to maintain positive dynamism is important to develop a successful curriculum.

Thapa (2018) explored the curriculum development and delivery process and underpinned that the industry stakeholders are not involved in the input of core competencies and no opportunity is given to them for the input of the competencies in the context of Nepal. Thapa adapted the methodology used by Semrad et al. (2012) from the work on the development of a Bachelor's degree program of competencies matrix with five categories. The study showed that employers are not involved in the content input and are involved in the end for the validation only. The instructors and academicians

develop the content and the industry stakeholders acknowledge it at the end without their involvement.

Thapa (2012) argued that the level of participation exhibited is low. The involvement of the industry sector is low in terms of time and the number of involvements. This indicates the level of engagement of employers in curriculum development. The curriculum development process in Nepal follows a standard content-based method, whereby individual faculty members are assigned to develop courses based on their expertise, however, an active role of the industry sector in curriculum input and development is often ignored.

TVET Governing Policy

Article 51 (h) 1 of the constitution of Nepal 2015 clearly states one of the basic needs of the citizens as to prepare human resources that are competent, competitive, ethical, and devoted to national interests, while making education scientific, technical, vocational, empirical, employment and people-oriented, the private sector and the employers should own the TVET and encourage them to invest in the education (Nepal Law Commission, 2015). This emphasizes the employer's involvement to produce competent human resources.

Likewise, Article 10.13.6 of the education policy 2019 emphasizes the involvement of the employers and linkage of the institute and industry to update the technology and the competencies demanded by the market in TVET (Ministry of Science, Education, and Technology [MoEST], 2019). The employers mean the stakeholders of private industries, public organizations, occupational associations, and business houses to keep in the pace of market need.

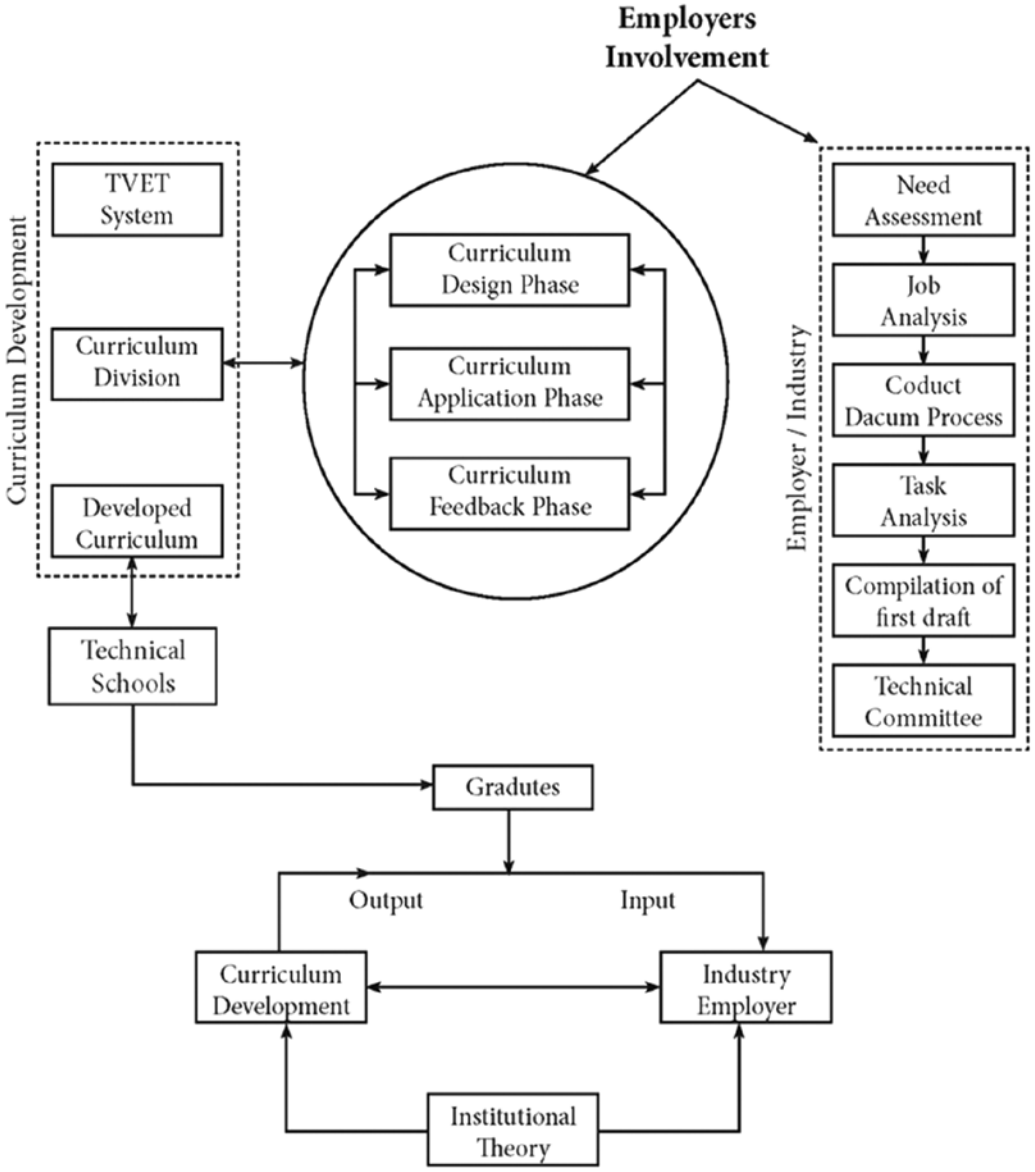
The Bylaws of curriculum 2048 ensures the involvement of the employers in the curriculum development is in the approval phase, the technical committee needs to incorporate the representative from the employers (Bhattarai, 2019).

In the international practice, the Australian vocational education and training (VET) system, "*National Work Integrated Learning Strategy policy of 2015"*, has assured partnership between universities and industries aimed at expanding work-integrated learning and strengthening engagement with employers in the competencies demanded by the market (Atkinson, 2016).

The policy documents of England (Huddleston & Laczik, 2012) clearly state that the employers lead the development of the Diploma qualifications and curriculum. Diplomas were introduced as part of the 14-19 education reform in England. They cover 17 lines of learning, out of which 14 relate to industrial sectors. Diploma development is led by the Sector Skills Councils (SSCs) and diploma qualifications are designed by employers, and knowledge and transferable skills are developed in an applied context of the market by employers. They are intended to offer an alternative curriculum for those learners who find applied learning more appealing than the traditional more academic education routes (Laczik & White, 2009).

In this line, this study explored the involvement of the industry sector in the curriculum development process in the TVET sector of Nepal as well as other countries and the extent to which industry sectors are involved.

Conceptual Framework



(Source: Renold et al., 2015)

The framework depicts the relationship between curriculum development and the industry/employer. The curriculum is taken as the dependent variable and the employer involvement is taken as the independent variable. The higher the involvement of the employers in the different processes of the curriculum design phase, the more the curriculum addresses the competencies demanded by the market and industry (Hariprasad, 2015). This conceptual framework is based on the curriculum value chain (Renold et al., 2015) of curriculum development theory based on institutional theory.

The curriculum value chain has three different phases of curriculum development, among them, the study concentrated on the design phase. The design phase goes through several processes to finalize the curriculum. The employer involvement in each process is a major concern of the study. The TVET governing body governs the total process of curriculum development. The curriculum developed with the input of the employers in each step is owned by the TVET apex body. The graduates are produced based on the developed curriculum which further is employed in the industry or labor market. The output and outcome of the technical institutes are the input of the industry. This research was conducted based on the conceptual framework and examined the level of the involvement of the employers in each process of the curriculum design phase. As cited in institutional theory (Becker, 1964), the inputs of the employer or industries as different institutes to the educational institute will produce the common goal of these two different institutes. The input of the employers in the curriculum design phase of the curriculum value chain is developed based on institutional theory. Thus, we first need to place VET curricula in this context. Next, it considers *Curriculum Theory* (Kelly, 2009), which deals with the justification of purposes of education and training. However, curriculum theory barely deals with the specific needs of VET, notably addressing the interface between the education and employment systems. Importantly, VET curricula have to consider the informational couplings between these two systems. Thus, the curriculum provides an approach for the investigation of coordination and control problems between the education and employment systems, the stronger the coupling between the education and employment system is, and the better the outcome on the youth labor market will be (Renold et al., 2015).

On the other hand, curriculum division which develops the curriculum was taken as the dependent variable. According to Jacobs et al. (2013), job performance is dependent on the curriculum defined by the CTEVT and its employability depends upon the curriculum developed by the CTEVT with the level of the involvement of the employers. The job performance of a technician is largely reflected through their soft skill and the comments of the employers and the job accuracy (Newman, 2002).

The relevant literature depicted the effect of the components such as employability in-service performance of technicians. Hence, the researchers measured the number of the industry sectors included during the process of curriculum development and the status of the employers' involvement in the process of TVET curriculum in the curriculum design phase.

CHAPTER III

RESEARCH METHODOLOGY

In this chapter, I presented the research methodology of this research which Creswell (2003) presents as the process of conducting research. Methodology in research gives the way of planning and conducting logically (Creswell, 2012). To be more specific, this chapter discussed the research methods employed for this research, the way the research participants were selected, the choice and selection of the research site, the data and information collection approaches used, and eventually the tools used for data and information analysis.

Research Design

In this research, I take research design as the procedure to conduct research (Singh, 2007). In this study, I adopted a survey research method within a descriptive quantitative research approach to guide the research procedure (Flick, 2011). I describe the state of the matters of the involvement of the industry sector in the curriculum development of TVET. It reports the level of involvement. I found the quantitative research approach most appropriate to answer my research questions and the survey method helped me to systematically to collect the required information (Creswell, 2003).

In addition to the quantitative approach as my primary research approach, I also adopted the qualitative approach to get information for the existing status of the level of involvement of the employers derived from the quantitative research. I interviewed different stakeholders like curriculum development process experts, employers, and curriculum division officials. The qualitative method helped to understand the existing level of involvement in curriculum development from the perspectives of employers and process experts of curriculum development.

Study Population

In social science research, population denotes the total group of people we want to generalize (Muijis, 2004). Further, Guthrie (2010) defined population as the universe of research. In this regard, the target population of this research included the stakeholders of industries — big, medium, or small — both from the public and private sectors. In my study, I concentrated on the industries of the public and private sectors that employed the graduates of the CTEVT. The population of this study included the supervisors of the industry, electrical manufacturer associations, and electrical workers' associations, etc. More to this, the districts of Kathamndu and Lalitpur were my research areas. More particularly, I concentrated on the Balaju Industrial Estate in the district of Kathmandu and the Patan Industrial Estate in the district of Lalitpur. There are 97 industries in the Balaju industrial area and 102 industries in the Patan industrial area comprising a total of 199 industries inside the industrial estate (Industrial Development Management [IDM], 2019), but only 30% of the industries employed the technical graduates of the CTEVT. I also included 50 industries outside these two industrial estates in the survey.

Following Creswell (2012), I collected numeric data from a representing population so that I can generalize the findings. Further, I interviewed different stakeholders like employers, process experts, and the curriculum division officials to explore the reasons for the existing level of involvement of employers in the curriculum development.

Sampling

To address the difficulty of acquiring data from the entire population within a specified period, this study was conducted on sample size rather than the population which is a small subset drawn from the total population, representative of the entire population (Creswell, 2003; Conrad & Serlin, 2005). The sample size was obtained through sampling which is the technique of collecting the true size of the sample (Guthrie, 2010). Hence, to draw the sample size, popularly adopted Yamane's sample size determination formula (Yamane, 1967 as cited in Subedi, 2017) was adopted as given below:

$$n = \frac{N}{1 + Ne^2}$$

where,
n = sample size,
N = total population
e = the acceptable standard error (usually 95 percent confidence level)

From the above relation, the sample size (n) with a margin of error of 5% under 95% of confidence level is calculated as

$$n = \frac{110}{1 + 110\ (0.05)^2}$$

Hence, the sample size of participants in this study was 87. Creswell (2012) highlighted that it is essential to maintain confidence in the statistical test and sampling errors. Therefore, the standard error of 5 per cent has been considered.

Sampling Technique: Random Sampling

Owing to the sample size (87), the researcher minimized the over-representation of the population. To ensure that each individual in the population had an equal chance of being chosen for the study, the researcher employed a simple random sampling method. To select 87 respondents from the population, probability sampling was the best way of ensuring that the sample selected was unbiased (Muijs, 2004) which was used in this research as well. According to Kalton and Heeringa (2003), the participants can randomly be selected from the given population till the sample size is reached. In the present study, simple random sampling was employed by developing a list of total employers (87). The sample was drawn from the list by the lottery method till the required sample size was reached.

Tools and Technique of Data Collection

The researcher created a set of questions that was utilized as the evaluation apparatus to collect the information. This apparatus tended to the suitable existing tools from previous studies and was finalized after contextualization in the Nepali TVET Curriculum development. A questionnaire to address all research inquiries was formed which accommodated close-ended questions to get quantifiable information. The benchmark was created on variables finalized for each research question. To address each variable, symbolic questions were developed for that objective and possible answers on choice were set.

Subsequently, sensibly generating the tool and guaranteeing pertinent substance, and develop legitimacy, it was ready for information collection which was an imperative step in the research process. Bryman (2016) stated data collection as the method of collecting information from respondents to answer the research questions. This study used the insights of Singh (2007) that highlight the efficient depictions of the existing phenomenon to get the required information (Singh, 2007, p.409).

The information was collected from the respondents as per the questionnaire as proposed by Bryman (2016). The information collection started with 10 per cent of the population to test the reliability and operationality of the questionnaire. After succeeding in the reliability test, the data was collected from the sample respondents exclusive of the piloted respondents.

Study Instrument: Questionnaire

A survey is a systematic method for collecting information from a sample of individuals (Yin, 1994). This study employed a survey method to collect the data of the subjects. A set of the questionnaire based on five points Likert scale was developed consulting the supervisor and the experts in the field based on the procedure of the TVET curriculum development and the curriculum value chain theory. With the support of the supervisor and experts, the questionnaire was slightly modified, edited, and further developed into five indicators conforming to our contexts. The questionnaire was divided into two sections to capture the essential areas of employers' demographic data and the level of involvement in the development of curriculum in the districts of Kathmandu and Lalitpur.

Section 'A' consisted of the demographic information of the respondents. This section contains a total of 15 personal attributes of the respondents like age, gender, academic qualifications, number of years of working experiences, current position, number of employees, type of organization, and category of the organization. Section 'B' collected the information on the aspects of level of involvement in the TVET curriculum development in the form of a five-point Likert scale as *Never (1)*, *Rarely (2)*, *Sometimes (3)*, *Often (4),* and *Usually (5)* to measure the different levels of involvement. Based on a five-point Likert scale, the responses obtained from the employers were ranked as:

Table 1 : Measurement Scale of Involvement Level

Employers' involvement Level	Score
Never	1
Rarely	2
Sometimes	3
Often	4
Usually	5

Reliability: Pre-test Study for Instrument

With permission from the supervisor, I conducted a pretest study of the questionnaire to check the validity of the instruments. The pretest study of the questionnaire helped me to reduce the ambiguities like redundancy and misunderstanding of items that could have crept into the questionnaire (Cohen, 2007).

Ten employers from three different industries in the districts of Kathmandu and Lalitpur were selected and requested to fill the questionnaire. Some of the respondents added their views to make the questions further clear. The data collected from the respondents were fed into SPSS version 20. To check the reliability of the instrument, the value of Cronbach's Alpha of five indicators of employers 'involvement – Association with the CTEVT, Associated with the CTEVT's school, Engagement in TVET Curriculum Development, Nature of Involvement in TVET Curriculum, and Level of the Employers' Involvement were measured.

The values of Cronbach's Alpha in the process of the pilot test were tabulated as follows:

Table 2 : Cronbach Alpha of Five Indicators of Employers' Involvement

S.N.	Indicators	Cronbach Alpha Value
1	*Association with CTEVT*	0.88
2	*Associated with CTEVT's School*	0.81
3	*Engagement in TVET Curriculum Development*	0.93
4	*Nature of Involvement in TVET Curriculum*	0.91
5	*Level of the Employers' Involvement*	0.91

Table 2 reveals the Cronbach Alpha of the proposed instrument as suggested by (Gliem & Gliem, 2003) to ensure the reliability of the instruments/items, i.e. $\alpha \geq 0.7$. According to the table, all the five constructs scored comfortably above 0.7 ranging from 0.81 to 0.93. This table ensures the high reliability of the variables of each of these constructs.

Reliability and Validity

To guarantee the excellence of study outcome and enhancement of quality of data shows the high-quality information to the study questions which is the basis to create study more substantial (Teddlie & Tashakkori, 2009). Reliability and validity are both serious concerns of instruments regarding their accuracy and consistency in research. Reliability in quantitative research is fundamentally a synonym for consistency and reliability over time, and groups of respondents (Cohen, 2007). In other words, reliability is the degree of consistency in time and instrument.

For the test of the reliability of the tool and the expected results, the researcher selected 10% of the sample size that included nine industrialists for the pilot test. For this test, the researcher distributed the questionnaire and their responses were collected. After the gap of one month, the same set of questionnaires was administered and distributed to the sample population and their responses were collected. Then mean score of the test was computed and then the correlation coefficient was used to obtain the value of Cronbach's alpha to check the reliability of the instrument to ensure whether there was any discrepancy. The correlation coefficient was computed for the test scores. Thus, the consistency of the instrument was ensured. Cronbach's alpha was taken as a statistical estimate to reveal the internal consistency of reliability of the test scores. As the value of alpha was ≥ 0.7, the test score is supposed to be acceptable. In this case, $\alpha = 0.81 \geq 0.7$.

The validity is the quality of the data collecting procedure that measures the data supposed to be measured for the research. While considering the quantitative research, validity is concerned with careful sampling, appropriate statistical treatment of data, and acknowledgement of the standard error in the process. Validity is related to the ability of an instrument what it intends to measure (Creswell, 2003).

There are three basic types of validity: content validity, construct validity, and criterion-related validity (Cohen, 2007). The researcher maintained content validity by involving the representativeness, or the sampling adequacy of included items in the light of the purpose of measuring the instrument. The two most commonly used methods of content validity involved the use of logical and personal judgments of groups of experts in the field by conducting the interaction with the stakeholders. The researcher maintained construct validity by assessing the instruments through convergent validity. Convergent validity was established when the score obtained by two different instruments measuring the same concept were highly correlated (Creswell, 2003).

Data Collection Procedure

Keeping into consideration the nature of the population and sample, an online survey for piloting and survey was deemed suitable and used. A self-administered questionnaire via online survey software using google form was distributed to the sample detailing the research purpose and several field visits were made to collect the data. Taking after survey's field strategies and time plans for dissemination (Singh, 2007), the data was collected from the generated sample size with one reminder email after 7 days of questionnaire distribution. This was done to ensure that the respondents fill up the questionnaire in case they forgot or missed the request. The record of the date of conveyance and date of return was recorded in a log sheet.

Data Analysis

Information collected without investigation does not carry any meaning. Additionally, a systematic analysis for each question was used for the concrete study. Since there was one research question in this study, data analysis tools were used accordingly, thereby, applying curriculum value chain theory. Data type in scale data using the Likert scale and the adequate sample size was pre-confirmed. Since it was an online survey, questions were made mandatory due to which the respondents were obliged to fill up previous questions to overcome the issue of missing value. The mean, standard deviation, and Analysis of Variance (ANOVA) test were used to find out the level of involvement.

Ethical Considerations

One of the issues in the overview is that a few respondents may take offence to it due to its substance. Others may display the need for certainty in giving rectify the information. Hence, highlighted the need to anticipate such issues and get ready to address them (Dooley, 2007). So, as purposed by Guthrie (2010), this study followed the code of ethical consideration showing social, professional, and scientific accountability, regards for respondents' rights and dignity, and maintaining integrity. The online data collection in this study guarantee that the respondents have their assent in filling up the survey question. The investigator ensures confidentiality in research and provides the autonomy to reply to the survey question.

Chapter Essence

The quantitative design was the main domain of the methodology but further interviewed the concerned stakeholders to find out the reason of the status of the level of involvement, with the population of 110 and sampling size was 87 with the 95% of confidence level with 5% of margin of error. The google form survey is the method used for the survey. The google form was opted due to the Covid-19 pandemic which was the only option in that context. The five-point Likert scale as *Never (1)*, *Rarely (2)*, *Sometimes (3)*, *Often (4),* and *Usually (5)* were used to examine the aspects of level of involvement in the TVET curriculum development. Data collection was carried out using an online survey tool through a self-administered questionnaire with a reminder email. The Cronbach alpha was greater than 0.810 at all the levels of question during the pilot test for the reliability test. The validity, especially content and convergent validity was also assured in the study. Besides, ethical consideration was maintained in this study.

CHAPTER IV

ANALYSIS OF EMPLOYERS' INVOLVEMENT IN CURRICULUM

This chapter deals with the analysis of the data into the information. The data of this study was the primary data so far collected from 79 respondents working in the industries of the districts of Kathmandu and Lalitpur that employed the CTEVT graduates. The data was collected through an online google survey form. It further explains the input of data into SPSS version 20, its processing codes and finally the interpretation of the result given in the form of mean, percentage, standard deviation, and ANOVA test.

The prime objective of the study was to assess the involvement of the employers in the TVET curriculum development whether they were associated with the TVET curriculum development or not. The computation was based on the mean value towards 32 sub-indicators by the different designation of the public and private industries of the districts of Kathmandu and Lalitpur. The researcher analyzed the involvement of the employers in the TVET curriculum development during the process and the association of industries and technical institutes. Further, the researcher analyzed the demographic factors of the respondents and the type of organization involved in the process of the TVET curriculum development.

Demographic Data of Employers

This part presents the demographic characteristics of 79 employers of the districts of Kathmandu and Lalitpur. Based on the result, the information has been presented in Table 3 below:

Gender and Age

Table 3 categorizes the age and gender of the respondents and their frequency:

Table 3 : Number and Percentage of Gender and Age

Demography Category	Number	Percentage (%)
Gender		
Female	4	5.1
Male	75	94.9
Total	79	100
Age		
Up to 30	16	20.3
31- 40	31	39.2
41-50	24	30.4
51 and above	8	10.1
Total	79	100

Table 3 shows the number of female respondents was 5.1% (N=4) whereas there were 94.9% (N-79) male respondents. This indicates the industries in Nepal are dominated by the man reaching the number 94.9% (N=79) against 5.1% (N=4) women employers. This finding is in confirmation with the Nepal Labor Force Survey 2017/2018 that records 13.2% women against 86.8% men working as managers (Central Bureau of Statistics [CBS], 2019) with a male-female ratio of 100:59 and less than one women managers in every seven men managers. The female labor force participation rate (LFPR) was 26.3% compared to the male LFPR (53.8%).

Likewise, of all i.e., 79 respondents in the sample, 20.3% were less than 30 years, 39.2% were the age group of 31-40, 30.4% were from the age group of 41-50, and 10.1% were above 51 years and above.

Organization Type and Classification of Industry

The organizational type and classification of industry data were analyzed. Table 4 gives an overview:

Table 4 : Number and Percentage of Organizational Type and Classification of Industries

Category Type	Number	Percentage
Types of Industries		
Private	64	81
Public	9	11.4
Others	6	7.6
Total	79	100
Classification		
Small Enterprises	18	22.8
Medium Enterprises	31	39.2
Large Enterprises	30	38.0
Total	79	100.0

Of 79 samples of the respondents from the employers, Table 4 shows a majority of enterprises i.e., 81% (64) were run by private sectors; only 11.4% i.e., nine constituted from the public sector and INGOs represented 7.6% i.e., 6. The contribution of public organizations to the labor market was 37.8% and 62.2% of the labor market share was contributed by private organizations (CBS, 2019). The finding of this study further confirms the finding of the Nepal Labor Force Survey 2019 which shows a higher contribution of private sectors to the labor market than the public sector.

Likewise, small enterprises industries represented 22.8% (18), medium enterprises constituted 39.2% (31) and large enterprises constituted 38.0 % (30). With 39.2%, medium enterprises have the highest presence in the sample. The finding of this study differs from the results of the Economic Survey (2077 BS) that reports the highest presence of small enterprises reaching 63% share.

Number of Employees

The data concerning the number of employees was analyzed. The analysis is presented in Table 5:

Table 5 : Number and Percentage of Number of the Employees

Number of Employees	Number	Percent
Less than 20	17	21.5
20-49	17	21.5
50-69	6	7.6
70-99	8	10.1
More than 100	31	39.3
Total	79	100.0

Table 5 shows that 21.5% (17) of enterprises employed less than 20 employees; 17 industries i.e., 21.5% also employed the workers between 20-49; industries that employed between 50-60 employees constituted 7.6% i.e., six in our sample; about 10.1% i.e., eight industries employed the workers between 77-99 and 39 industries were comprising 31% in our sample that employed more than 100 workers. The study is closely in line with the economic survey 2019 which shows the employment rate per industry in large, medium, and small is 140, 90, and 55 respectively (Ministry of Finance [MoF], 2019).

Qualifications

The data concerning the qualifications of the respondents were analyzed. It is presented as follows:

Table 6 : Number and Percentage of Qualification of Respondents

Academic Qualification	Number	Percent
Up Secondary Level (10 grade)	1	1.3
Up to Diploma	19	24.1
Bachelor	22	27.7
Master's	36	45.6
Others	1	1.3
Total	79	100.0

Table 6 shows that 1.3% of the respondents from the industries had graduates of class ten; 24.1% had diplomas; 22 (27.7%) had bachelor's degrees; 36 (45.6%) were graduates of Master's level of education and 1(1.3%) held the doctoral degree.

Working Experience

The data regarding working experience was analyzed which was categorized and their frequency was presented in Table 7:

Table 7 : Number and Percentage of Working Experience

Working Experience	Number	Percent
2-5 years	14	17.7
Above 5 years	65	82.3
Total	79	100.0

Table 7 shows, of all i.e., 79 respondents, a majority i.e. 82.3% of the respondents had a working experience of more than five years. Likewise, 17.7% had a working experience of 2-5 years.

Knowledge about the TVET System of Nepal

Table 8 presents the information o knowledge about the TVET system of Nepal:

Table 8 : Number and Percentage of Knowledge about the TVET System of Nepal

Knowledge about TVET	Number	Percent
Yes	73	92.4
No	6	7.6
Total	79	100.0

Table 8 indicates that a majority of the respondents i.e., 92.4% (73) knew the TVET system of Nepal. Only, 7.6%, (6) were not aware of the TVET system of Nepal.

Knowledge about the CTEVT

The data regarding the knowledge about the CTVET was analyzed in terms of categories and their frequency. The summary of the analysis is presented in Table 9:

Table 9 : Number and Percentage of Knowledge about CTVET

Knowledge about CTEVT	Number	Percent
Completely unknown	6	7.6
Slightly had some information	45	57.0
Completely updated with its activities	28	35.4
Total	79	100.0

Based on Table 9, 28 i.e., 35.4% of respondents were fully aware of the activities of the CTEVT. On the other hand 45 i.e., 57% had slight information about the activities of the CTVET, and 6 i.e., 7.6% were completely unaware of the activities of the CTEVT.

Knowledge about the CTEVT Develops Pre-Diploma Curriculum

The data regarding the knowledge about the CTVET develops pre-diploma curriculum was analyzed which was categorized and their frequency is presented in Table 10:

Table 10 : Number and Percentage on Knowledge about the CTVET Develops Pre diploma Curriculum

Knowledge about CTEVT	Number	Percent
Yes	67	84.8
No	12	15.2
Total	79	100.0

Referring to Table 10, a majority of the respondents i.e., 84.8% (67) from industries knew that the CTEVT develops a pre-diploma curriculum. They were aware that CTVET is the authorized TVET body that develops the pre-diploma curriculum. On the other hand, 12 respondents i.e., 15.2% were not aware of the fact that the CTVET develops the pre-diploma curriculum.

Industry Linkage with CTEVT

The information on industries as per their classification, linkage, and association with CTEVT is presented in Table 11:

Table 11 : Mean and Standard Deviation of the Industries Classification's Linkage with CTEVT

Classification of Industry	Mean	N	Std. Deviation
Small Enterprises	2.45	18	.90
Medium Enterprises	2.32	31	1.00
Large Enterprises	2.35	30	.97
Total	2.36	79	.96

Low (mean 1.00 to 2.33), Moderate (mean 2.34 to 3.67) & high (mean 3.68 to 5.00) (Best & Khan, 2007)

According to Table 11, the linkage of industries or the association with the CTEVT was moderate as all the classification of the industries mean was higher than 2.34. The 18 small enterprises' mean was 2.43 with the Standard Deviation (SD) of 0.901, whereas medium enterprises' mean was 2.32 with a standard deviation of 1.00548 from 31 respondents, likewise, 30 large enterprises' mean was 2.35 with a standard deviation of 0.975. The total enterprise linkage with CTEVT was moderate with a mean of 2.36 and a standard deviation of 0.96031. The data shows the linkage of industries as per the classification with the CTEVT having no significant difference. The type of industries linkage and association with the CTEVT is presented in Table 12:

Table 12 : Descriptive Statistics of the Type of Industries Linkage with the CTEVT

Organization Type	Mean	N	Std. Deviation
Private	2.33	64	.93
Public	2.47	15	1.08
Total	2.36	79	.96

Concerning Table 12, the linkage of industries with the CTEVT as per the type of industries with the CTEVT was moderate. The mean value of 64 private industries' linkage was 2.33 with a standard deviation of 0.936. Similarly, the 15 public organizations had a moderate linkage with the mean value of 2.477 with a standard deviation of 1.08. The total linkage was moderate with a mean value of 2.36 with a standard deviation of 0.96. The data shows that the type of industries linkage with the CTEVT has no significant difference.

Industry Linkage with the CTEVT's Schools

The industries as per their classification, linkage, and association with the CTEVTs school are presented in Table 13.

Table 13 : Mean and Standard Deviation of the Industries Classification's Linkage with the CTEVT's Schools

Classification of Industry	Mean	N	Std. Deviation
Small Enterprises	2.98	18	.98
Medium Enterprises	2.82	31	.96
Large Enterprises	2.87	30	1.00
Total	2.88	79	.97

Table 13 shows that the linkage of industries as per the classification of industries with the CTEVT's schools was moderate with a mean value of 2.88 and standard deviation of 0.97. The mean value of 18 small enterprises was 2.98 with a standard deviation of 0.98, whereas the mean value of medium enterprises was 2.82 with a standard deviation of 0.96 from 31 respondents, likewise, the mean value of 30 large enterprises was 2.87 with a standard deviation of 1.003. The total enterprises' linkage with CTEVT's school was moderate with a mean of 2.88 and a standard deviation of 0.97. The type of industry linkage and association with CTEVT's school is presented in Table 14.

Table 14 : Mean and Standard Deviation of the Type of Industries Linkage with CTEVT's School

Organization Type	Mean	N	Std. Deviation
Private	2.95	64	.98
Public	2.57	15	.87
Total	2.88	79	.97

Table 14 shows the linkage of industries as per the type of industries with the CTEVT's school was

moderate. About 64 private industries' linkage was moderate with the mean value of 2.94 and the standard deviation of 0.98. Similarly, 15 public organizations had a moderate level of linkage with the mean value of 2.57 and with a standard deviation of 0.87. The total linkage was moderate with a mean value of 2.88 with a standard deviation of 0.97.

Involvement of Employers in Curriculum Development with CTEVT

The involvement of employers in curriculum development with CTEVT as per the industries classification is presented in Table 15:

Table 15 : Mean and Standard Deviation of the Involvement of the Employers of the Curriculum Development with CTEVT as per Industries Classification

Type of Industry	Mean	N	Std. Deviation
Small Enterprises	2.13	18	.93
Medium Enterprises	2.10	31	.93
Large Enterprises	1.97	30	1.05
Total	2.06	79	.97

(Low (mean 1.00 to 2.33), Moderate (mean 2.34 to 3.67) & High (mean 3.68 to 5.00) (Best & Khan, 2007))

The involvement of the employers in the curriculum development with CTEVT as per the classification of industries was low with a mean value of 2.06 and a standard deviation of 0.97. The mean value of 18 small enterprises was 2.13 with a standard deviation of 0.93, whereas the mean of medium enterprises was 2.10 with a standard deviation of 0.93 from 31 respondents. Likewise, the mean value of 30 large enterprises was 1.97 with a standard deviation of 1.05. Among the small, medium, and large enterprises, large enterprises with the mean value of 1.97 had the least involvement in the process of curriculum design. The existing literature suggests that 14% of employers involved in defining the content and determining the standard of TVET is in line with the prior studies of Renold et al. (2015).

The involvement of employers in curriculum development with the CTEVT as per the type of industries is presented in Table 16.

Table 16 : Mean and Standard Deviation of the Involvement of the Employers of the Curriculum Development with the CTEVT as per Type of Industries

Organization Type	Mean	N	Std. Deviation
Private	2.02	64	0.96
Public	2.24	15	1.02
Total	2.06	79	0.97

Table 16 shows that the involvement of the employers in the curriculum development with the CTEVT as per the type of industries was low with a mean value of 2.06 and a standard deviation of

0.97. The mean value of 64 private organizations was 2.03 with a standard deviation of 0.96, whereas the mean of public organizations was 2.24 with a standard deviation of 1.02 from 15 respondents.

Nature of Curriculum Involvement of Employers

The nature of the involvement of employers in curriculum development as per the classification of the industries is presented in Table 17.

Table 17 : Mean and Standard Deviation of the Nature of Involvement of the Employers in the Curriculum Development as per Classification of the Industries

Classification of Industry	Mean	N	Std. Deviation
Small Enterprises	1.74	18	.79
Medium Enterprises	1.73	31	.87
Large Enterprises	1.71	30	.91
Total	1.72	79	.86

As per Table 17, the nature of the involvement of the employers in the curriculum development as per the classification of industries was low with the mean value of 1.72 and the standard deviation of 0.86. The mean of small enterprises was 1.74 with a standard deviation of 0.79, whereas the mean value of medium enterprises was 1.73 with a standard deviation of 0.87 from 31 respondents. Likewise, the mean value of 30 large enterprises was 1.71 with a standard deviation of 0.91. Among the small, medium, and large enterprises, large enterprises had the least nature of involvement with the mean value of 1.71. The data showed that an active role of industry in developing curriculum was found low in Nepal which is consistent with the findings of the prior studies (Thapa, 2018).

The nature of the involvement of employers in curriculum development as per the type of industries is presented in Table 18:

Table 18 : Mean and Standard Deviation of the Nature of Involvement of the Employers in the Curriculum Development as per the type of Industries

Organization Type	Mean	N	Std. Deviation
Private	1.69	64	.85
Public	1.87	15	.90
Total	1.72	79	.86

Table 18 shows that the nature of involvement of the employers in the curriculum development as per the type of industries was low with a mean value of 1.72 and a standard deviation of 0.86. The mean value of 64 private organizations was 1.69 with a standard deviation of 0.85, whereas the mean of the public organization was 1.87 with a standard deviation of 0.90 from 15 respondents. Regarding the involvement between the private and public organizations, the involvement of public organizations was higher compared to private organizations but the study shows not much significant difference concerning the nature of their involvement.

Level of Involvement of Employers in the Different Process of Curriculum Development in Design Phase

The level of involvement of employers in the different processes of curriculum development as per the classification of industries is presented in Table 19.

Table 19 : Mean and Standard Deviation of the Level of Involvement of the Employers in the Different Processes of the Curriculum Development as per Industries Classification

Type of Industry	Small Enterprises		Medium Enterprises		Large Enterprises		Total	
	Mean	N	Mean	N	Mean	N	Mean	N
I am involved in written request of TNA	1.39	18	1.58	31	1.5	30	1.51	79
I am involved in job analysis workshop	1.94	18	1.94	31	1.73	30	1.86	79
I am involved in DACUM workshop	1.78	18	1.77	31	1.9	30	1.82	79
I am involved in regular advisory board meetings	1.39	18	1.61	31	1.53	30	1.53	79
I am involved in technical committee meeting	1.94	18	1.68	31	1.77	30	1.77	79

Table 19 shows a much lower level of involvement of the employers in the above-stated processes irrespective of the size of the industries. Overall, their involvement was relatively lower in the written request for the training need analysis (TNA) and in regular board advisory meetings with an average score of 1.51 and 1.53 respectively. With regards to large-sized enterprises, their involvement in the written request of TNA and regular advisory board meetings were among the lowest with the mean value of 1.51 and 1.53. Involvement in these activities was consistently lower in all three: small, medium, and large-sized enterprises. Their involvement in job analysis workshops was relatively higher for all enterprises. The level of involvement in each process was low which agrees with the earlier studies of Renold et al. (2015). Similarly, the data is in close line with the study of Thapa (2018) that stated a low level of participation in the development of the TVET curriculum.

The level of involvement of employers in the different processes of curriculum development as per the type of industries is presented in the table.

Table 20 : Mean and Standard Deviation of the Level of Involvement of the Employers in the Different Processes of the Curriculum Development as per the Type of Industries

Organization Type	Private		Public		Others		Total	
	Mean	N	Mean	N	Mean	N	Mean	N
I am involved in written request of TNA	1.45	64	1.78	9	1.67	6	1.51	79
I am involved in job analysis workshop	1.88	64	1.89	9	1.67	6	1.86	79
I am involved in DACUM workshop	1.73	64	2.44	9	1.83	6	1.82	79
I am involved in regular advisory board meetings	1.53	64	1.56	9	1.5	6	1.53	79
I am involved in technical committee meeting	1.72	64	2.00	9	2.00	6	1.77	79

As per Table 20, the level of the involvement of employers in the written request for the training need analysis (TNA) was lower with a mean value of 1.51. On the other hand, the involvement of the public organizations in the TNA process was higher with a mean value of 1.78. In the case of the involvement of job analysis workshop, it was low with a mean value of 1.86 as compared to public and private organizations, the involvement of public organizations was higher with a mean value of 1.89. Similarly, the involvement in the DACUM workshop was low with a mean value of 1.82, the involvement of public organizations was higher as compared to private with the mean value of 2.44. The involvement in regular advisory board meetings was low with a mean value of 1.53, whereas involvement in technical committee meetings was low with a mean value of 1.77. The technical committee meeting involvement was higher in the case of the public organization as compared to private with a mean value of 2.00.

Respondents' Involvement by Organization Type and Classification of Industry

The respondents' involvement by organization type and its classification of the industry is presented in Table 21:

Table 21 : Mean and Standard Deviation of the Respondents' Involvement by Organization Type of Industry

Organization Type	Mean	N	Std. Deviation
Private	2.02	64	.96
Public	2.30	9	1.13
Others	2.14	6	.93
Total	2.06	79	.97

Concerning Table 21, the mean value of the private organizations' involvement was 2.02 with a standard deviation of 0.96 and the mean was 2.30 with a standard deviation of 1.13. The table indicates that no significant difference between the involvement of private and public organizations.

Table 22 : One-way-ANOVA Test for Involvement Rate by Types of Organization

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.67	2	.33	.35	.70
Within Groups	72.88	76	.95		
Total	73.55	78			

Based on Table 22 above, the analysis of the frequency of industrial involvement in the curriculum development process of TVET was found below average. The degree of respondents' involvement was mentioned in progressive order from 1 to 5 relating it to (1) never, (2) rarely (3) sometimes (4) often, and (5) usually. Then the respondents were asked to choose the appropriate one among them. On average, the response of the respondents regarding their involvement in the curriculum development process was found close to rarely, i.e. 2.06, while comparing average involvement rate as per the types of organization, but a slight variation was found among them. The mean score of their involvement rate was found the lowest (2.02) for the employers of private organizations, whereas the corresponding score was slightly higher (2.3) for public organizations and other types of organizations were (2.1) as shown in Table 23. The mean square of between groups (=0.33) was found less than the mean square of within groups (=0.95) at F (2.76) = 0.35, p=0.70>0.05. The result shows that the groups were not found significantly different from each other.

Employers' Involvement with Organizational Classification of Industry

To assess the employers' involvement with the organizational classification of the industry, mean values were taken into consideration. Besides, the dispersion was measured using standard deviation.

Table 23 : Mean and Standard Deviation of the Respondents' Involvement by Organizational Classification of Industry

Type of Industry	Mean	N	Std. Deviation
Small Enterprises	2.13	18	.93
Medium Enterprises	2.10	31	.93
Large Enterprises	1.97	30	1.05
Total	2.06	79	.97

Table 24 : One-way-ANOVA Test for Involvement Rate by Classification of Industries

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.36	2	.18	.18	.82
Within Groups	73.19	76	.96		
Total	73.55	78			

Table 24 shows the variation of involvement in curricula development analyzed among the classification of industries. The involvement rate was found slightly higher for the employees of small

enterprises (2.13) followed by medium enterprises was 2.11 and large enterprises were 1.98 while carrying out the one-way-ANOVA test, the mean square of between groups (=0.18) was found less than the mean square of within groups (=0.96). However, the result shows that the groups were not found significantly different from each other (F = 2.76, p >, 05) as shown in Table 24. This indicates the analysis in this research did not explore any evidence to justify that the involvement tendency of employees of industries in the curriculum development process of TVET programs is influenced by the size of the industry or its types.

Chapter Essence

In this chapter, the researcher assessed the involvement of the employers in the TVET curriculum using mean and standard deviation through the mean summative score. Similarly, the mean and standard deviation in each process of the curriculum development was analyzed and were found low. One-way-ANOVA test for involvement rate by types of organization and classification of the organization were tested and variation among the classification and type of the employer was not found statistically significant. The analysis of the frequency of industrial involvement in the curriculum development process of TVET was found below average.

CHAPTER V

FINDINGS AND DISCUSSION

This chapter focuses on the findings of the study. This study intended to assess the level of involvement of industrial employers from the districts of Kathmandu and Lalitpur in the development of the TVET curriculum. The findings are discussed within the theoretical insights of the TVET curriculum development and curriculum value chain theory.

Findings

The findings of this study showed that the involvement of employers in curriculum development with the CTEVT, namely: request for the demand of occupation; request for the demand of competencies and skills; an opportunity to participate in need assessment; engagement in job analysis; engagement in DACUM; and engagement in the compilation of drafts of the curriculum were attributed as the involvement of employers in curriculum based on the values of means. In most cases, they turned out to be less than 2.36. However, request for the demand of occupation (mean value = 2.35), request for the demand of competencies/skills (mean value = 2.29), opportunity to participate in need assessment (mean value = 2.13), engagement in job analysis (mean value = 1.95), engagement in DACUM (mean value = 1.66), engagement in compilation of drafts of curriculum (mean value = 1.85) are less than 2.36. This shows the involvement of employers in the development of the curriculum process was low. The data showed the participation in the development process was low and this finding is in line with the study of Renold (2018) that showed only 14% of the Nepali employers defined the curriculum content and involvement in the curriculum development. Likewise, 14% of companies agreed that the involvement in curriculum development is legally defined and none of the companies agreed that they were involved in curriculum design individually or through association.

This study shows a low level of employers' involvement. The nature of their engagement in the development of curriculum with the CTEVT, namely, their involvement in the written request of TNA, in the job analysis workshop, in DACUM workshop, and their provision of written feedback and input in workshops were attributed as nature of curriculum involvement based on the values of means. In all the cases, their involvement turned out to be of a much lower level, for instance: involvement in a written request of the TNA (mean value =1.51), involvement in job analysis workshop (mean value =1.86), involvement in DACUM workshop (mean value =1.82), written feedback and input in workshops (mean value =1.87), involvement in regular advisory board meetings (mean value =1.53), and involvement in technical committee meeting (mean value =1.77). We saw all the mean values were less than 1.87; it indicates the nature of the involvement of employers in the development of the curriculum process was low. It also indicates a weak level of involvement of employers in the process of curriculum development. However, the lowest level of involvement of employers was in TNA and regular advisory board meetings with the mean values of 1.51 and 1.53 respectively. The findings are in line with the previous literature e.g., (Thapa, 2018). Thapa (2018) found a low level of participation of industrial employers in the process

of curriculum development both in terms of time and the number of engagements. During the process, the researcher observed that the employers were confined to validate the process at the end. Such concerns have drawn research attention in other countries too. Ashari and Mohamad (2013) concluded that the industrial employers often did not get engaged in the process of curriculum development to provide input on contents although they were the ultimate beneficiaries of TVET. Raihan (2014) highlighted that the gap between the institutes of TVET and the skills demanded by the employers or labor market was widening in Bangladesh because of insufficient participation of employers in TVET.

While testing, the data were classified into the type of industries belonging to public and private sectors. Further, they were classified in terms of their size i.e., small, medium, and large industries referring to the involvement in the TVET curriculum development. Then Analysis of Variance (ANOVA) was then used to analyze the data. The calculated p-value was found to be 0.8 in the type of industries and p-value 0.7 in the classification of the industries which was greater than 0.05. This clearly shows that the analysis in this research did not explore any evidence to justify that the involvement tendency of industries in the curriculum development process of TVET programs is influenced by the size of the industry or its types. The value shows that it is not found statistically significant while carrying out the one-way-ANOVA test. Huddlestan and Laczik's (2011) study in the UK also was in line with this study regarding the difficulty in ensuring the involvement of small and medium industries in the curriculum development process.

Qualitative Essence of the Interview

The findings of this study led the researcher to draw a conclusion and find out the reason for the low involvement of the employers in the TVET curriculum development. The quantitative data shows that the involvement of the employers was low in the TVET curriculum development but did not explore the reasons for the low-level involvement. Therefore, to explore the reason for the low-level involvement, interviews were conducted with different stakeholders of the TVET curriculum development procedure. The outcome of the interview was intended to give further insights into the findings of this quantitative study. Thus I conducted a focused interview with two employers, one with the curriculum division director and another with the curriculum process expert. The essence of the interviews helped the researcher to assess the different reasons for the low involvement in TVET curriculum development qualitatively. The summary of the interview is presented as follows:

Practices of Curriculum Development Process in TVET

This method involves the reformulation of stories presented by the respondents taking into account, the context of each case and the different experiences of each respondent. I adopted narrative analysis to revise the primary qualitative data by the researcher. The fundamental principle of selecting the participants in the TVET curriculum development was one-third of the participants each from the employers, academic sector, and the association and health council in the case of the health sector, but as the participation of the association was low, the proportion was further arranged to 50% from the employers and 30% from the academic sector and 20% from the occupation association or council. The size of the experts was 12-15. However, the fundamental principle mentioned that

the system encourages the informal channel and personal relations as employers recommend the irrelevant participants for the curriculum development workshop.

The relevant skilled experts are not recommended for the curriculum development by the employers because the industries are affected in the production work as these skilled experts are engaged for 3-5 days during the workshop. The qualitative data is in line with the quantitative findings as the system approach of involving the employers in the curriculum development process is personal and informal approach, the level of involvement is low in the TVET curriculum development process.

Gap in Awareness

In this section, the participants (curriculum division director and process expert) shared their experiences on the low level of participation of employers in curriculum development. It was highlighted that the employers have a lack of awareness of the benefit of their contribution to the curriculum development. One of the participants shared that the involvement of employers in the curriculum will enhance with market demanded competencies to the graduates and not being aware that their contribution for few days during the curriculum design will benefit them in the future. The short-term benefits are prioritized which shows that the awareness regarding the benefit of the involvement, in the long run, is lacking. This aspect of understating shows that the findings of qualitative are in line with the findings of low involvement in the quantitative data.

Cosmetic Involvement

The employers are not honoured by the curriculum division, as employers are informed to meet the quota for the curriculum development workshop, the respondents underpin that they are informed informally and few hours before the curriculum development workshop. The involvement is not based on the participation of each sector. It is based on the personal contact and approaches of the officials of the curriculum division. The employers are involved for the sake of formality as the competencies recommended are not incorporated. The participants from the industry are not aware of the terminology and the process like DACUM. The employers underscore that to release for the few days for the curriculum is difficult in the industry as it hampers the production work of the organization. This shows the low level of involvement in the curriculum development which resembles the findings of the quantitative data.

Discussions

The findings of this study showed that employers' involvement in the TVET curriculum was low both at the level of involvement of the employers in TVET curriculum development and the nature of the involvement in the TVET curriculum development. The researcher further employed the qualitative approach to understanding the low level of involvement. The qualitative approach underpinned that the reasons for the low participation had different perceptions by different stakeholders. The TVET curriculum development apex body officially agreed that a formal approach for corresponding the employer did not work as they never send the specific occupation expert for the development process. Another reason for not involving the experts from the industries was that they were not released as their absence would affect the production of the industries.

The essence of the involvement and the benefit of their involvement was not understood by the employers. Thus experts were involved through the informal approach and personal contact. Scesa and Williams (2008) revealed that the reasons for low involvement included lack of interest, lack of understanding, lack of awareness, and lack of ability through time and work pressures on the part of employers, and the vocabulary and language used during the process was not compatible.

Likewise, the process expert accepted the fact that he had to cancel the scheduled curriculum development workshop due to the reason that employers did not send the occupation expert when corresponded through the formal channel. If the experts are recommended by the employers, they send the non-occupational experts like the finance officer or the administrative officer. He accepted the fact that experts were involved through personal contact. The involvement of the SMEs in the process is time-consuming and evidence shows that engagement of the employers through employer association is beneficial but engagement is low (Scesa & Williams, 2008). However, the employers' perception of the low involvement is that employers are not treated respectfully as they are informed by telephone call just a few hours before the workshop. The employers are invited to fill up the quota and for the formality because whatever the competencies are recommended they are not incorporated. The official prioritized the personal contact, not the expert from the occupations. The other reason is that the employers are not aware of the benefits of the employers' involvement in the TVET curriculum development. The experts hesitated to participate in the process as they do not know about the process like DACUM and job analysis. This is closely in line with the existing literature underpinning the awareness of employers and lack of knowledge about the process and terminology (Scesa & Williams, 2008).

The present study was carried out within the theoretical framework of the curriculum value chain theory. Renold et al. (2018) suggested that there must be involvement of the employers in the curriculum design phase, curriculum application phase, and curriculum feedback phase to produce the human resource as per the demand of the market. The curriculum value chain theory highlights that the quality of the curriculum is ensured with the involvement of the employers in the curriculum design phase. The ultimate goal of TVET is to provide employment to the graduates and increase productivity. To achieve this goal the TVET curriculum should ensure that the graduates acquire the skills and competencies demanded by the markets. To ensure this the industrial employers can provide essential feedback in the process of TVET curriculum development. However, this study found a low level of involvement of employers in the process of curriculum development. This finding is similar to the study of Rageth and Renold (2019). The quality of the TVET curriculum is assured if that addresses the demand of the market.

To add the understanding of the issues further, we added the qualitative approach to the quantitative data to highlight the share of the power of the education system which was higher and this finding is closely in line with Renold et al. (2016). The employers have limited influence on curriculum content, program delivery, and curriculum update because the education system does not take the feedback of industries because of power relations. A curriculum developed without the involvement of employers is likely to mismatch between the skills and competencies acquired in the technical schools and actual demand in the labor market. The reverse is the case when the employers have the most of the power and educators have limited influence (Rageth & Renold, 2019).

Chapter Essence

In this chapter, the researcher discussed the findings concerning the level of involvement of employers in TVET curricula development with special reference to engagement in demand of occupation, engagement in demand of competencies/skills, engagement in job analysis, engagement in DACUM, and engagement in the compilation of the drafts of the curriculum. The researcher discussed the findings and assessed the level of employers' involvement and nature of involvement from the employers of the districts of Kathmandu and Lalitpur. Further, the researcher explored the extent of association of the findings with findings of other studies based on the literature, theories, and personal observations and reflections. The findings indicated that the level of involvement of the employers in the TVET curriculum was low. It is analyzed that the level of involvement is low to address the market demand competencies. If it is not addressed in time about the production of technical human resources by the technical institutes, TVET providers may fail in meeting the demand of the employers and that will further affect the employability of technical human resources. Finally, the quantitative result of this study was compared qualitatively taking a focused interview with employers, process experts, and the authorized official of the curriculum division to explore the existing reality of the level of involvement of employers in TVET curriculum development.

CHAPTER VI

SUMMARY, CONCLUSION, AND IMPLICATIONS

This chapter begins with the recapitulation of the study and draws conclusions based on the findings. This chapter summarizes the findings and discussion of the study and discusses the implications of the study in academic and practical fields with special reference to the concerned policymakers and stakeholders. This chapter also includes a section on the limitations of this study and finally addresses the issues that can be taken up in the future.

Recapitulation of the Study

The global discourse on a nation's prosperity argues that skilling the youth, particularly through TVET competencies and skills, is fundamental to the prosperity of a nation. The essence of the TVET system is to produce the skilled human resource required for the labor market or industries. The key objective of TVET is to prepare an individual for employment in the job market through the acquisition of knowledge, skills, and attitude (Ekpo & Onweh, 2012). The key and major stakeholders of the TVET system are industrial employers, without them TVET is worthless. Their involvement in the process of curriculum development makes the TVET sector market-oriented opening the opportunities for employment and the graduates getting ready for the market needs. Therefore, the linkage between industries and technical institutes is the basis of the success of the TVET sector. The employers are formally or informally involved in the TVET sectors through apprenticeship, in-service training, work-based learning, sector specialist committee, and technical committee. To strengthen the linkage between industries and technical institutes, active involvement of industrial employers in the development of the TVET curriculum providing inputs on the required competencies and skills through which the graduates to be equipped to meet the needs of the market and employers. This study argued that an updated and theoretically sound process of curriculum development can meet these learning attributes of the TVET trainees. Therefore, a better relationship between the TVET institutes and industrial employers results in the high quality of the TVET curriculum and the success of the TVET sector as a whole.

The present study was conducted basically on the format of quantitative information. The data were collected with the help of a questionnaire developed with the support of my supervisor and subject experts. The primary data were directly collected by the researcher. The total population of the employers was 110 and samples were 87. The researcher carried out both descriptive and inferential statistical analysis. The data were analyzed, processed and findings were categorized to interpret the answers to the research question.

The high involvement of the employers in the TVET curriculum reflects the demand of the market which increases the rate of employability. Employment promotes the quality of life by contributing to the national GDP to strengthen the national economy. Since the active involvement of the employers in the TVET curriculum development facilitates the process of the employability of the TVET graduates, such an initiative benefits the employers, the TVET sectors, and the nation in its

entirety. However, this study found that the involvement of the employers in the TVET curriculum development is alarmingly low i.e., below 33%. The mandatory level of involvement is 33%. This indicates the TVET institutes produce graduates and they do not acquire the required skills and competencies required by the market. The present study specifically sought to assess the level of involvement of industrial employers from the districts of Kathmandu and Lalitpur in the process of TVET curriculum development.

Self- Reflection

I got a grant to conduct this research and it is a matter of pride for me to have this opportunity. For me, carrying out an extensive study in the field of my interest was important because it reflected my passion to further investigate this area. I, as a practitioner and an academician of the TVET sector, realized numerous problems caused by the mismatch of skills and competencies. I felt the need to assess the role of employers in the process of the TVET curriculum development including different occasions like OJT, apprenticeship, interactions, and focused group discussions. I also felt industrial employers were not getting skilled and competent human resources required by industries. My experience and a critical review of relevant literature made me aware that the shortage of skilled and competent human resources could be efficiently addressed by updating and making a market-oriented TVET curriculum. The relevant literature informed me that the active involvement of industrial employers in the process of TVET curriculum development is the key to reduce the gap of the skill mismatch and boost employability. The existing literature highlights industry-institute linkage and the involvement of employers increases the rate of employment and reduces the gap of the skill mismatch (Hariprasad, 2015). TVET is linked with employment and productivity; therefore, the involvement of employers helps address the issue of mismatch and increase employment. As a researcher, I was keen to know the level of involvement of employers in the TVET curriculum development.

While collecting the data and analyzing them, I discovered a very low level of involvement of employers in the TVET curriculum development. The level of involvement of employers was alarmingly low. Therefore, it is the right time to address the issues related to the linkage between industry and institute. The study revealed that employers' involvement in each process of curriculum development was low irrespective of the type and classification of industries. To understand the issue further, I had in-depth interviews with the concerned stakeholders like the authorized person of the curriculum division, process experts, and employers. Based on this series of interviews, important issues related to the employers' involvement in the process of TVET curriculum development were identified. One of the important issues was the restriction of employers by the system for the involvement because the authorized body encouraged personal contacts. Another issue was that the employers were not aware of the benefits of the involvement. The essence of the interview was also under the quantitative result of the study.

Conclusions

TVET fulfils a variety of national goals. It is conceived as a primary tool not only to facilitate technology transfer but also to produce the mid-level skilled human resource the country and industry need. The competencies and skills required by the market and employers can be fulfilled with the involvement of the employers in TVET. The skills requirement by the market can be addressed by the means of the curriculum. The curriculum should mirror the training needs of the global market. To reflect the market need, the involvement of the employers in TVET curriculum development is essential. It is because, despite high rates of unemployment, research indicates that employers have a difficult time finding workers who have the knowledge and skills needed for available jobs that indicate that the present curriculum does not reflect the demand of the employers. Therefore, the rationale of the government's investment in TVET is at stake because the primary objectives of the TVET system i.e., employment and productivity are questioned.

In today's educational system, the involvement of industries in curriculum development is essential to prepare the trainees for employment. This bridges the gap between the industry and institutions and enables the trainees to become industry-ready (Balasubramani, 2014). This study revealed a very low level of involvement of employers in TVET curriculum development and it was in conformance with the previous literature. A TVET curriculum developed without the involvement of employers fails to instil the skills and competencies required by the employers. If there is higher involvement of employers in curriculum development, it represents the need of the market and further contributes to the employment rate. Therefore, to address the market demand competencies, the involvement of the employer is mandatory. This is because the curriculum needs to reflect the needs of the global market, otherwise, the graduates produced would not meet the requirements of the employers. In this regard, Joseph (2016) found that the involvement of the employers would reduce the mismatch of the skills suggesting that graduates need to be more closely aligned with the skills and competencies required for employment. To produce the skilled human resource required for the present context world of work, the quality of curriculum should get a greater emphasis from employers. Industry employers know what potential employees need in the market. The involvement of employers in curriculum development helps to ensure that learners develop work readiness and technical skills. Their involvement is also the key to minimize the gap between the demand and supply of skills thereby promoting employment in the job market.

The industry drives the TVET system. Industry plays a major role in inculcating competencies. Therefore, the curriculum needs to be linked with industry to address technical and work readiness skills demanded by employers. In this way, the curriculum developed with the involvement of the employers may reduce the mismatch of the skills and enhance graduates' employment opportunities and employers can save their effort to train the employees when they are employed.

Implications of the Study

One of TVET's key stakeholders is the employers. The employers employ the TVET graduates of the technical schools for efficiency in productivity. If TVET fails to address the employers' needs, the TVET investment is wasted. The best way to engage the employers in the TVET system is to involve them in the curriculum development process. In the context of Nepal, employers' demands

and the mismatch of the skills can be addressed through the curriculum. So based on the findings of this study, TVET providers can make appropriate strategies to increase employers' involvement in the curriculum development process. Further, this study's findings also perform as an eye-opener to the employers since their engagement ultimately benefits them because their inputs help the TVET institutes draft curricula to meet the demands of industries. An appropriate and updated curriculum enables the graduates to get ready for the jobs. Therefore, the involvement of the employers in curriculum development helps them align with the skills demanded by the employers.

Implications for Policy Makers

Policymakers need to accept the fact that the government has a highly prioritized TVET system that emphasizes training the mid-level human resources by establishing technical schools in all 753 local bodies of the nation. TVET contributes to the national economy by producing efficient and skilled human resources because employers employ only skilled and efficient workers. Therefore, the concerned authority of TVET must involve employers in the process of TVET curriculum development. The contribution of the industry to the development of curricula is essential for the holistic training of the trainees. It is high time that the policy needs to be in favour of the involvement of the employers in the different processes of the curriculum development for the holistic training of the trainees to meet the requirement of the market. The policymakers thus need to ensure that policies mention the volume of the employers to address the need of the market and contribute to the employment rate.

Implications for Further Research

This study can act as a guideline for future research because this area is yet not adequately explored in the context of Nepal. Even though the focus of this study was to assess the level of involvement of employers in the TVET curriculum development, future researchers can continue research focusing on the following issues.

First, this study was delimited to the employers of two districts of Nepal viz. Kathmandu and Lalitpur. So future researchers can extend the scope of generalizing from a wider geographical area. Moreover, future researchers are encouraged to conduct similar types of studies in different provinces, as well as national-based studies to give a national picture. Similarly, this study was limited to the involvement of employers in the pre-diploma curriculum which narrowed the scope of generalization. Hence, future researchers can focus on other types of TVET curriculum like diploma level and short courses of different provinces. Secondly, this research was primarily based on a quantitative approach. Future researchers can conduct such studies adopting qualitative and mixed methods which would add strength in finding further reasons, in-depth, for the low-level engagement of the employers in the different steps of the TVET curriculum development and gather different dimensions and make it more relevant and interesting.

Last but not the least, future researchers may focus on the relationship between the involvement of the industries and employment. These variables would broaden the research scope and give a deeper understanding of the issues which will reinforce the TVET system of Nepal.

REFERENCES

Ameita, E., & Ramsey, K. M. (2009). *Institutional theory.* Springer.

Ashari1, Zool, M. H., Rasul, M. S., & Norza. (2018). *A review on the TVET issues in Malaysia and the participation of industries in the TVET system*. Springer.

Atkinson, G. (2016). *Work-based learning and work-integrated learning: Fostering engagement with employers.* National Center for Vocational Education Research.

Badal, B. (2011). *Curriculum development process*. CTEVT.

Balasubramani, R. (2014). *Participation of industry in curriculum design and delivery.* NITTE.

Balaju School of Engineering and Technology. (2017). *Tracer study of BSET.* Author.

Bappah, A. S., & Medugu, J. D. (2013). Employers' perception of the role of Technical Vocational Education and Training in sustainable development in Nigeria. *IOSR Journal of Research and Methods in Education*.

Baral, D. P. (2019). Country case study on technical vocational education and training (TVET) in Nepal. *Working Paper, 7*, 13.

Baral, D. P., Kemper, J. M., & Mariscal, K. M. (2019). Country case study on technical vocational education and training (TVET) in Nepal. *Working Paper, 7*, 13.

Barnett, D. R. (2011). Partenering industry and education for the curricular enhancement. *Online Journal of Workforce Education*.

Becker, G. (1964) Human Capital, University of Chicago Press:

Best, J. W., & Khan, J. V. (2007). *Research in Education* (9th ed.). Prentice Hall.

Bhattarai, A. (2019). Skilling youth through industry linkages: Case of Nepal. *Journal of Training and Development*, *4*, 3-11.

Bryman, A. (2016). *Social research methods* (4th ed.). Oxford University Press.

Central Bureau of Statistics. (2019). *Report on the Nepal labor force survey 2017/2018.* Author.

Cohen, L. (2007). *Research methods in education.* Routledge.

Conrad, C. F., & Serlin, R. C. (2005). *The Sage handbook for research in education: Engaging ideas and enriching inquiry*. Sage Publications.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed-method approaches* (2nd ed.). Sage.

Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and*

qualitative research (4th ed.). PHL Learning Private Limited.

CTEVT. (1988). *Curriculum bylaw.* CTEVT.

CTEVT. (2019). *Annual report.* CTEVT.

CTEVT. (2020). *A tracer study of the pre-diploma graduates of 2074 in Karnali and Sudarpaschim province.* CTEVT.

CTEVT. (2020). *Annual report 2075-2076.* CTEVT.

Dooley, D. (2007). Social Research methods (4th edition).

Ekpo, A. B., & Onweh, V. E. (2012). Coping with the global economic crisis: A challenge to technical vocational education and training (TVET) in Nigeria. *African Journals Online*.

Flick, U. (2011). *Introducing research methodology: A beginner's guide to doing a research project.* Sage.

Guthrie, G. (2010). *Basic research methods: An entry to social science research.* Sage.

Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Hariprasad, S. (2015). *Exploring Industry's contribution to curriculum design of Civil Engineering programs at Universities of Technology.* The Durban University of Technology.

Heinz, W. R. (2008). Occupational socialization. *Handbook of Technical and Vocational Education and Training Research*, 481-89.

Howard, J. (2007). Curriculum development.

Huddleston, P., & Laczik, A. (2012). Successes and challenges of employer engagement: the new Diploma qualification. *Journal of Education and Work*, *25*(4), 403-421.

Industrial Development Management. (2019). *Souvenir 2019.* IDM.

Joseph, W. (2016). *The role of industry in curriculum development*. Springer.

Kalton, G., & Heeringa, S. (2003). *Leslie Kish selected papers.* Wiley.

Katherine, M. C., & Renold, U. (2018). Goal setting of TVET reform: A framework for identifying the ideal system in Nepal. *Journal of Education and Research*, *8*(1), 6-28.

Kelly, V. A. (2009). *The curriculum theory and practice.* Sage.

Laczik, A., & White, C. (2009). Employer engagement within 14-19 diploma development. *Research in post-compulsory education.*

Laguador, J. M., & Ramos Jr, L. R. (2014). Industry partners' preferences for graduates: Input on

curriculum development. *Journal of Education and Literature*, *1*, 1-8.

Leslie, J., & Clunan, A. (2011). *Bounding institutional authority in comparative politics and international relations*. Eurostudia.

Ma, Y. (2011). *Engaging Employers in Curriculum Development through Collaboration: An Case Study of an Executive MBA programme* (Master's thesis).

Mainali, M. K. (2012). Curriculum development and implementation process in the CTEVT. *TVET Journal*, *Volume*(Issue number),

Ministry of Finance. (2019). *Economic Survey 2076/77 B.S.* Author.

Ministry of Education, Science and Technology. (2019). *National Education Policy, 2019.* Author.

Muijis, D. (2004). *Doing quantitative research in education using SPSS.* Sage.

Nepal Law Commission. (2015). *Constitution of Nepal 2072.* Author.

Newman, U. M. (2002). Factors influencing staff motivation among employees. *Human Resource and Sustainability Studies*.

Okorafor, P. N., & Okorafor, A. O. (2013). Technical and Vocational Education and Training for human resource development (HRD) in the emerging knowledge economy. *The Intuition*, *5*.

Poonam, A. (2013). Indian experience of internal and international collaboration in TVET and prospects of regional cooperation. *Collaboration in TVET*, 17.

Powell, W. W., & DiMaggio, P. J. (Eds.). (2012). *The new institutionalism in organizational analysis*. University of Chicago press.

Rageth, L., & Renold, U. (2020). The linkage between the education and employment systems: ideal types of vocational education and training programs. *Journal of Education Policy*, *35*(4), 503-528.

Raihan, A. (2014). Collaboration between TVET institutions and industries in Bangladesh to enhance employability skills. *International Journal of Engineering and Technical Research (IJETR)*, *2*(10), 50-55.

Rauner, F. (2009). Overview: TVET research. *International Handbook of Education for the Changing World of Work*, 1442-1460.

Renold, U. (2018). *TVET system and its analytical concepts*. KOF Swiss Economic Institute.

Renold, U., Boli, T., Regeth, L., & Filippo, P. (2015). *Feasibility study for the curriculum comparison in VET*. Sage.

Renold, U., Ladina, R., Katherine, C., & Burgi, J. (2019). *Theoretical and methodological framework for measuring the robustness of social institutions in education and training.* KOF Swiss Economic Institute.

Scesa, A., & Williams, R. (2008). *Engagement in course development by employers.* Social Science Research Center.

Schnarr, A., Yang, S., & Gleißner, K. (2008). *Vocational education and training and the labour market: A comparative analysis of China and Germany*. In WEnt.

Semrad, K., Donohoe, H., & Thapa, B. (2012). Educating the next generation of tourism and hospitality managers: What core competencies will a globalized industry require them? In C. Schott & M. Fesenmaier (Eds), *Tranformational leadership for tourism education* (pp. 103-107). Tourism education futures institute.

Sharma, T. N. (2008). *Technical education and vocational training in Nepal. TVET Development Journal*, *2*(8).

Singh, K. (2007). *Quantitative social research methods.* Sage.

Spottl, G. (2009). *International handbook*. Springer.

Subedi, B. P. (2017). *Relationship between headteacher leadership attributes and social climate in community schools in Nepal* (Doctoral Thesis). Kathmandu University, School of Education, Balkumari, Lalitpur, Nepal.

Taba, H. (1962). *Curriculum development: Theory and practice* (No. 37.013 TAB).

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Sage.

Teijeiro, M., Rungo, P., & Freire, M. J. (2013). Graduates competencies and employability: The impact of matching from need and personal attainments. *Economics of Education Review*, *34*(1), 286-295.

Tessema, B. S., & Abejehu, S. B. (2017). University-industry collaboration in curriculum development: Analysis of banking and finance graduates' attributes from educators and industries perspective. *Education Journal*, *6*(2), 87-93.

Thapa, B. (2018). Industry involvement in curriculum development: A case study in Nepal. *Industry and Higher Education, 32*(3), 200-206.

International Centre for Technical and Vocational Education & United Nations Educational Scientific and Cultural Organization, (2013). *Conceptual and position paper: Technical and vocational education and training.* Santiago.

Veillard, J. H. (2012). *Vocation and learning*. Santiago.

Yasin, R. M., Minghat, A. D., & Saema. (2013). Sustainable development elements in the vocational-subjects coursework of the Malay sian secondary-school curriculum. *Research Journal of Applied Science*, *8*(8), 388-392.

Yin, R. K. (1994). Discovering the future of the case study. Method in evaluation research. *Evaluation practice*, *15*(3), 283-290.

About the Author

Anil Muni Bajracharya is a well-known name in the field of Technical and Vocational Education and Training (TVET) in Nepal. Mr. Bajracharya has engineered the promotion of TVET education and system in Nepal as an instructor, guide, editor, planner and bureaucrat for 25 years now. He believes that a strong and competitive TVET system acts as a springboard for decent employment opportunities excelling in the latest practices in TVET learning and practices.

This publication is a well sought-after research work into the portrayal of employers' role for TVET curriculum development in the design phase. The study was carried out within the quantitative approach using the survey as a research method. It examined the level of employers' engagement in the TVET curriculum-making process in Nepal. The study claimed that the involvement of employers in the curriculum design of TVET in Nepal can solve the problem of employers' needs and students' skill development. The findings would be interesting for any TVET scholar or enthusiast.

Linking Education with Labor Markets (LELAM) Project 2021

Linking Education and Labour Markets: Under what conditions can Technical Vocational Education and Training (TVET) improve the income of the youth? (LELAM-TVET4INCOME) a six-year project (2017-2022) implemented in Nepal, Benin, Chile and Costa Rica. The Swiss Federal Institute of Technology (ETH Zurich) is the leading partner of the project. The LELAM project is financed by the Swiss Agency for Development and Cooperation (SDC) and the Swiss National Science Foundation (SNSF) under their joint "Swiss Programme for Research on Global Issues for Development" (r4d program). The project aims to understand how policymakers in low- and middle-income countries can improve the youth labor-market situation by strengthening social institutions and their interdependence with formal, non-formal and informal TVET. It also aims to analyze the conditions under which TVET improves gainful employment and job quality and thereby improves the income of youth.

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