

EMPLOYER'S PERSPECTIVE ON DUAL VET APPRENTICESHIP PROGRAMS:
STUDY OF MORANG AND SUNSARI INDUSTRIAL CORRIDOR

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AN ABSTRACT

of the dissertation of *Khirendra Kumar Yadav* for the degree *Master in Technical and Vocational Education and Training* presented on *17 November 2024* entitled *Employer's Perspective on Dual VET Apprenticeship Program: Study of Morang and Sunsari Industrial Corridor*.

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The study explores the perceptions and experiences of employers regarding the implementation of the Dual Vocational Education and Training (VET) Apprenticeship program in Nepal. Dual VET Programs integrate classroom learning with workplace training to align vocational education with industry needs. The study attempts to assess employers' perception of implementation, future perspectives, and challenges of the dual VET apprenticeship program, focusing on the Sunsari and Morang industrial corridor. Similarly, by using qualitative research and in-depth interviews with employers from various industries, the study has tried to evaluate the benefits, future perspectives and challenges of Dual VET programs.

Employers identified the Dual VET programs as having benefits of generating employment opportunities, advancing industrial growth, reducing human resources costs, enhancing workforce skills, and achieving financial savings through practical and efficient training methods as well as mutual benefits of Employer and apprentices. On the other hand, Employers view the Dual VET program as a pathway to skill development and increasing employability. Its potential to align workforce capabilities with industry demands highlights its promising role in addressing future labor market needs. Additionally, the Dual VET contributes significantly to economic and industrial growth by equipping individuals with theoretical and practical competencies.

Employers recognized that while Dual VET programs offer significant benefits and hold an optimistic future, several challenges hinder their effectiveness. The Key challenges include apprentices' lack of experience and the Industrial skill gap, insufficient access to modern industrial equipment and safety concerns, Low levels of apprentice engagement and motivation towards the Dual VET and the misalignment of schedules between industries and training institutions.

By comparing these findings with global research, the study points out the need for stronger collaboration between educational institutions and industries to optimize the apprenticeship model. This research contributes valuable insights to the vocational education landscape in Nepal, highlighting the potential of the Dual VET Apprenticeship program to address local labor shortages and drive economic growth, while also identifying areas for improvement in employer engagement and program implementation.

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17 November 2024

शोध सार

विकास अध्ययनमा स्नातकोत्तर डिग्रीको लागि खिरेन्द्र कुमार यादवको शोध प्रबन्धको शीर्षक "डुअल भेट अप्रेन्टिसशिप कार्यक्रममा रोजगारदाताहरूको दृष्टिकोण: मोरङ र सुनसरी औद्योगिक करिडोरको अध्ययन" २ मङ्सिर २०८१ मा प्रस्तुत गरिएको थियो।

.....

दुर्गा प्रसाद बराल, पिएचडी

शोध निर्देशक

अध्ययनले नेपालमा डुअल व्यावसायिक शिक्षा तथा तालिम (Dual Vocational Education and Training) अप्रेन्टिसशिप कार्यक्रमको कार्यान्वयनबारे रोजगारदाताहरूका धारणा र अनुभवहरूको अन्वेषण गरेको छ । डुअल व्यावसायिक शिक्षा तथा तालिम कार्यक्रमहरूले कक्षाकोठाको शिक्षालाई कार्यस्थल तालिमसँग एकीकृत गरेर व्यावसायिक शिक्षालाई उद्योगको आवश्यकता अनुसार राम्रोसँग तालमेल मिलाउन मद्दत गर्दछ। यो अध्ययनले सुनसरी र मोरङ औद्योगिक करिडोरमा केन्द्रित गर्दै डुअल व्यावसायिक शिक्षा तथा तालिम अप्रेन्टिसशिप कार्यक्रमको कार्यान्वयन, भविष्यको सम्भावना, र चुनौतीहरूमा रोजगारदाताहरूको धारणा मूल्याङ्कन गर्न प्रयास गरेको छ । त्यसैगरी, गुणात्मक अनुसन्धान र विभिन्न उद्योगका रोजगारदाताहरूसँगको गहन अन्तरवार्ता प्रयोग गरेर अध्ययनले डुअल VET कार्यक्रमका फाइदा, भविष्यको सम्भावना र चुनौतीहरूको मूल्याङ्कन गर्न खोजेको छ।

रोजगारदाताहरूले डुअल व्यावसायिक शिक्षा तथा तालिम कार्यक्रमका प्रमुख फाइदाहरू रोजगारी अवसरको सिर्जना, औद्योगिक विकासको प्रवर्द्धन, मानव संसाधन लागत घटाउने, श्रमिकको सीप अभिवृद्धि गर्ने, र व्यावहारिक र प्रभावकारी तालिम विधिहरू मार्फत वित्तीय बचत हासिल गर्ने रहेको पहिचान गरेका छन्। साथै, यो कार्यक्रम रोजगारदाताहरू र अप्रेन्टिसहरूका लागि परस्पर लाभदायक भएको बताएका छन्। अर्कोतर्फ, रोजगारदाताहरूले यसलाई सीप विकास र रोजगारक्षमता बढाउने मार्गका रूपमा हेर्ने गरेका छन्। उद्योगको मागसँग श्रमिकको क्षमतालाई मिलाउन यसको सम्भावित भूमिकाले भविष्यको श्रम बजारका आवश्यकताहरू सम्बोधन गर्न महत्वपूर्ण भूमिका खेल्न सक्छ।

यसका अतिरिक्त, डुअल व्यावसायिक शिक्षा तथा तालिम कार्यक्रमले व्यक्तिहरूलाई सैद्धान्तिक र व्यावहारिक क्षमताले सुसज्जित गर्दै आर्थिक र औद्योगिक विकासमा महत्वपूर्ण योगदान

पुन्याउँछ। तर, रोजगारदाताहरूले भनेका छन् कि दुअल व्यावसायिक शिक्षा तथा तालिम कार्यक्रमका उल्लेखनीय फाइदाहरू र सकारात्मक भविष्यको सम्भावना भए पनि यसका प्रभावकारितामा केही चुनौतीहरूले बाधा पुऱ्याइरहेका छन्। प्रमुख चुनौतीहरूमा अप्रेन्टिसहरूको अनुभवको कमी साथै औद्योगिक सीपको अन्तर, आधुनिक औद्योगिक उपकरणहरू र सुरक्षा उपायहरूको कमी, अप्रेन्टिसहरूको कम संलग्नता र प्रेरणा, साथै उद्योग र तालिम संस्थाहरूबीच तालमेल अभाव रहेका छन्।

ग्लोबल अनुसन्धानसँग यी निष्कर्षहरू तुलना गरेर अध्ययनले अप्रेन्टिससिप मोडेललाई अनुकूलन गर्न शैक्षिक संस्थाहरू र उद्योगहरू बीचको सहकार्यलाई अझ बलियो बनाउन आवश्यक रहेको देखाउँछ। यो अनुसन्धानले नेपालको व्यावसायिक शिक्षा क्षेत्रलाई महत्त्वपूर्ण अन्तरदृष्टिहरू प्रदान गर्दछ, जसले स्थानीय श्रम अभाव समाधान गर्न र आर्थिक वृद्धिलाई अघि बढाउन दुअल व्यावसायिक शिक्षा तथा तालिम अप्रेन्टिससिप कार्यक्रमको सम्भावनालाई उजागर गर्दछ, साथै रोजगारदाताहरूको सहभागिता र कार्यक्रम कार्यान्वयनमा सुधारका क्षेत्रहरू पहिचान गर्दछ ।

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खिरेन्द्र कुमार यादव
उपाधि उम्मेदवार

२ मङ्सिर २०८१

This dissertation entitled *Employer's Perspective on Dual VET Apprenticeship Program: Study of Morang and Sunsari Industrial Corridor* presented by *Khirendra Kumar Yadav* on 17 November 2024.

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DECLARATION

I hereby declare that this dissertation is my original work, and it has not been submitted for the candidature for any other degree at any other university.

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DEDICATION

I dedicate this Thesis to my late father, whose unwavering love, guidance, and sacrifices continue to inspire me every day. Though you are no longer with us, your values, wisdom, and strength remain my guiding light. Thank you for everything you did to shape who I am today. This work is a reflection of your dreams for me, and I hope to make you proud. You are deeply missed and forever in my heart.

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LIST OF ABBREVIATION

BTI	Butwal Training Institution
CIM	Chamber Industries Morang
CTEVT	Council for Technical Education and Vocational Training
ENSSURE	Enhanced Skills for Sustainable and Rewarding Employment
FMCG	Fast-Moving Consumer Goods
FNCCI	Federation of Nepalese Chamber of Commerce and Industries
ILO	International Labor Organization
MOEST	Ministry of Education, Science, and Technology
MTC	Mechanical Training Center
MTVET	Masters in Technical and Vocational Education and Training
OJT	On-the-Job Training
OJT	On-the-Job Training
SDC	Swiss Agency for Development and Cooperation
TSLC	Technical School Leaving Certificate
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training

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CHAPTER I

BACKGROUND OF STUDY

Apprenticeships are a unique form of technical and vocational training that combines on-the-job skill development with off-the-job learning to become better at a particular occupation. In apprenticeship programs apprenticeships have learning opportunities in training institutes and in the industries, so it is called Dual Vocational Education and Training (VET) apprenticeship. The International Labor Organization (ILO) defined apprenticeship in its Apprenticeship Recommendation (ILO, 1939) as follows: “an apprenticeship refers to a structured system in which an employer formally agrees, through a contractual arrangement, to hire a young Individual and provide systematic training for a specific trade. This training is delivered over a predetermined period, during which the apprentice is obligated to work under the employer's supervision and guidance.

In certain multi-purpose schools, modern vocational education was first introduced in the 1960s for early productive education in addition to general education. Some institutions, such the Mechanical Training Center (MTC) and Butwal Training Institution (BTI), began emphasizing technical and vocational education. These institutes were founded with distinct educational structures from general education. These organizations also started official programs for on-the-job training (OJT), internships, and apprenticeships in Nepal. However, after 2018, Council for Technical Education and Vocational Training (CTEVT) introduced a Dual VET program in a few selected schools in different occupations.

Vocational education in modern-day Nepal arose with the intention of educating school dropouts and preparing them as lower- and middle-level workers, according to the Industrial Trainee Training Act, 2039, (1982). However, according to the 2018 Guidelines for Apprenticeship Training (CTEVT, 2018), apprenticeship training is a type of learning that places students in a real-world setting after they have acquired theoretical information in the classroom.

The Dual Vocational Education and Training (VET) Apprenticeship program is a widely recognized model that combines classroom-based education with workplace training to equip individuals with practical skills and industry-specific knowledge. It is particularly effective in countries such as Germany, Austria, and Switzerland, where

it has become an integral part of the educational and economic systems (Rauner & Smith, 2010). This system allows apprentices to gain theoretical knowledge in a school setting while applying it in real-world scenarios at their place of employment. The Dual aspect of the program bridges the gap between academic learning and the practical needs of industries, providing a skilled workforce that is ready to meet market demands (Euler, 2013). Similarly Dual VET Apprenticeship Programs in Bangladesh, Sri Lanka, and India highlights unique approaches and shared challenges in implementing effective TVET systems. In Bangladesh, TVET is acknowledged as a critical driver of economic development, focusing on employer collaboration to enhance apprenticeships' relevance and quality. However, the absence of standardized curricula and limited employer engagement continues to hinder the effectiveness of Dual VET models (ResearchGate, 2024). Similarly, Sri Lanka integrates practical training within its educational frameworks through public-private collaborations to prepare a workforce ready for industry demands. Challenges such as resource constraints and employer skepticism over productivity losses during training mirror the difficulties seen in Nepal (Combination of UNESCO & Vocational Education [UNEVOC], 2023) and in India's Dual VET initiatives, including the National Apprenticeship Promotion Scheme, emphasize employability and skill gap reduction. Despite progress, fragmented implementation, low employer awareness, and resistance to infrastructure investments remain significant barriers (ILO, 2017b).

In developing countries, the Dual VET system has been introduced as a strategy to address unemployment and skills mismatches. In Nepal, for example, initiatives led by CTEVT aim to modernize the traditional apprenticeship system and align it more closely with labor market needs (Bolli et al., 2018). However, challenges persist, particularly in employer engagement, curriculum alignment, and scaling up the program (Paudel & Eberhardt, 2023a). Despite these challenges, the program remains a crucial tool for enhancing employability, reducing youth unemployment, and fostering economic growth by creating a highly adaptable workforce (Kuczera & Field, 2018a). The Dual VET-Apprenticeship 24 months program keeps going for a considerable length of time. The initial three months comprise of study hall training. The program is 24 months in which initially 3 months in-house training and 18 months in industrial training followed by once in week in-house training and finally one month's in-house training for preparing CTEVT examinations. The Dual VET-Apprenticeship prompts a Technical School Leaving Certificate (TSLC). (CTEVT,

2022a). The Technical School Leaving Certificate (TSLC) program, introduced in 1989, CTEVT facilitated the TSLC program's growth by affiliating numerous institutions across Nepal, enabling wider access to skill-based education. The TSLC curriculum emphasizes hands-on training, which aligns well with the concept of apprenticeship. However, in recent years, TSLC programs have evolved to integrate with modern training frameworks like the Dual Vocational Education and Training (VET) Apprenticeship program, introduced in 2018. This model blends classroom learning with real-world workplace training to enhance employability and industrial relevance (Paudel, 2023).

It is extensively discussed how to involve employers in the process of developing skills. In recent decades, including Nepal, the interaction between TVET providers and employers has attracted a great deal of attention. One of the top aims of educational reform has also been participation and cooperation with shared responsibility (Ministry of Education, Science & Technology [MoEST], 2019). The interaction is also predicted as a solution for reducing workplace incompatibility. With such a relationship, TVET providers and enterprises can work more closely together and assist children in being ready for the workforce (Hordern, 2018). However, due to information gaps about one another's aptitude and supportive responsibilities within the TVET system, expected employer engagements in the TVET system are frequently perceived as poor and low (Bolli et al., 2018). Thapa (2018) discuss the study in Nepal revealed limited industry participation in the process of developing and delivering curricula. Employers, and more specifically industry professionals, were not involved in the input of core competences, and they were not provided with any opportunities throughout the development of competencies.

Problem Statement

The implementation of Dual VET-Apprenticeships that combine classroom education with workplace training at company/industries is particularly (Eichhorst et al. 2012; Valiente & Scandurra, 2017). Two important reasons for this are challenging (see that Dual VET-Apprenticeships require companies/industries to be willing to provide apprenticeship places (Wolter et al., 2006; Wolter & Muehleemann, 2014) and require coordination among several actors (see e.g., Ryan, 2000; Ryan & Unwin, 2013). Hence, the complexity of the actors setting represents a challenge to implementing and scaling up Dual VET-Apprenticeship programs.

Practice of Dual VET Apprenticeship is supposed to enhance effectiveness of the Technical and Vocational Education and Training in Nepal. However, the current implementation faces numerous challenges, including uncertainties and hesitations from both employers and apprentices regarding the program's structure and benefits.

One significant concern is the unclear expectations and objectives of the Dual VET approach, leading to confusion among stakeholders about their roles and responsibilities. Employers often express hesitancy due to the perceived risks associated with training inexperienced apprentices, fearing that this may lead to lower productivity or safety issues in the workplace (Kafle, 2022).

Furthermore, there is a notable lack of research on the perceptions of employers regarding the Dual VET apprenticeship program. Most existing studies focus on the broader impacts of vocational education and training without delving into the specific views and experiences of employers implementing these programs (Paudel & Eberhardt, 2023b). This gap in research makes it difficult to understand the challenges employers face and the potential areas for improvement within the program.

The implementation of the Dual Vocational Education and Training (VET) Apprenticeship program in Nepal presents unique challenges and opportunities from the perspective of employers. The initiative, which integrates classroom learning with workplace training, aims to address the country's critical skill shortages and enhance employability among the workforce. However, while many companies appreciate the potential for cost-effective skill development and long-term profitability, several barriers exist. Employers frequently express concerns about the retention of apprentices during the training period, the balance between training costs and productive returns, and the mismatch between classroom content and industry needs (Bolli et al., 2019). Additionally, the expansion of the program demands extensive collaboration between schools, companies, and industry associations, which is further complicated by a lack of standardized expectations regarding wages and unclear governance frameworks under the ongoing federalization process (KOF Swiss Economic Institute, 2019). These issues highlight the need to explore employers' perspectives on implementation of Dual VET apprenticeship program.

Rationale and Significance of the Study

This research is significant as it introduces innovative perspectives of Employers implementing Dual VET apprenticeship program. It uniquely captures the practical and lived experiences of employers throughout their journey of implementing and completing the Dual VET program. By focusing on employers perceptions, the study offers a fresh angle, setting it apart from earlier research on the Dual apprenticeship program in Nepal. Additionally, it directly or indirectly benefits Technical and Vocational Education and Training (TVET) stakeholders and Dual apprenticeship actors at the national level, fostering public discourse among educators, planners, and policymakers. These discussions are instrumental in shaping future TVET policies to achieve national educational goals.

Moreover, the findings contribute to the professional growth of TVET practitioners by providing insights into challenges faced by employers and suggesting solutions to enhance the program's effectiveness. It raises awareness about the importance of the Dual VET apprenticeship system among different actors of Nepal. Furthermore, it serves as a valuable resource for future studies, offering a reference point for researchers and supporting their efforts to advance understanding in this field.

Employers' participation encourages a mutually beneficial interaction between TVET Institutions and employers, preparing apprentices for fruitful careers in the industry. Therefore, very limited study has conducted about Dual VET apprenticeship program in Nepal but from the employers perspective none of the studies has conducted. Hence this study shows the perception of employers in implementing Dual VET apprenticeship programs, Benefits, Challenges and the future of this training approach in the country.

Purpose of the Study

The purpose of this study is to explore employers' perceptions regarding its benefits, future potential and value in workforce development through Dual VET apprenticeship. Additionally, the study aims to identify and analyze the challenges and problems employers encounter while implementing the program in Sunsari and Morang Industrial Corridor¹.

¹ an unofficial term coined by Nepali business groups for the industrial area located in Koshi Province which is officially not declared as an industrial area or an economic zone.

Research Questions

This study has the following research questions:

1. How do employers get benefits from Dual VET apprenticeship program and envision the future of Dual VET apprenticeship program in Nepal
2. How do employers experience challenges in implementing Dual VET apprenticeship programs?

Chapter Summary

This chapter presents background, problem statement, significance, purpose and research questions of the study. The Dual VET Apprenticeship program combines classroom education with workplace training, aiming to enhance skills through practical learning. In Nepal, vocational education has historically catered to school dropouts, but the modern apprenticeship system introduced by CTEVT in 2018 tries to align education with industry needs. Despite its potential, employer participation in apprenticeship programs remains limited. Studies highlight challenges in employer involvement, curriculum development, and collaboration between TVET providers and industries, with many noting weak industry engagement. This research focuses on understanding employers' perceptions of the Dual VET Apprenticeship in the Sunsari and Morang Corridor, addressing issues like participation, ownership, and coordination in the program. It examines whether employers willingly engage with the program or feel forced, aiming to uncover insights into how this apprenticeship model is received and implemented. The study seeks to answer questions about employer perceptions and experiences in implementing the Dual VET Apprenticeship program, contributing valuable information to the vocational education landscape in Nepal.

CHAPTER II

LITERATURE REVIEW

Dual VET Apprenticeship

In this chapter, I explain about the literature review done on Dual VET in Global context and comparing the Nepal's Dual VET apprenticeship program with global context. This chapter discuss about the TVET system as well as apprenticeship training approach. A literature review is also done to know the Dual VET apprenticeship in context in Nepal and what are the legal provisions supporting Nepal's Dual VET system. I have explained how human capital theory is used to explain my research.

Dual TVET and Global Context

Dual VET Apprenticeship program is like two wheels of a motor bike, where one wheel is apprentices and other wheel is employers in which training provider organization, CTEVT, donors are like gear of same motor bike which helps the program to step up or step down according to need of market demand, where market demand is road. Therefore it is clearly seen that all the actors involved in the program is very important but in the research we are going to explore about the perception of employers towards this Dual VET apprenticeship program.

The growth of apprenticeship has been influenced by social, political, and industrial needs, becoming deeply rooted in society, they demonstrate that, despite several difficulties, Dual VET training in Germany serves as a crucial educational route for young people to enter the workforce and forms the foundation of the country's economy (Paudel & Eberhardt, 2023c). This is not the case in Nepal, where apprenticeship training struggles to gain acceptance among the key players in the economy despite the governance institutions that have been put in place in the meantime. They finally settle on following the "six central pillars for successful quality apprenticeships" outlined by the (ILO, 2017a), which include inclusion, a strong labor market, equal funding, and clear duties and responsibilities. In this literature they have discussed on very important parts of Dual VET apprenticeship program including labor market, curriculum development, and governance and financing system in Nepal and Germany but employers' perception towards dual VET was not discussed clearly.

Although TVET programs are offered in Nepal based on the curriculum, there has been no correlation between the gained skills and the demands of the labor market (Sharma, 2008). According to (Caves & Renold, 2018), employment is essential to TVET, and through connecting education and employment, TVET's quality can be guaranteed. The curriculum, where companies participate in the formulation, implementation, and revision of TVET curricula, is the finest way to illustrate this connection. This helps the trainees acquire skills that are applicable to the job market. Therefore, the involvement of employers in the curriculum-making process is crucial to meeting the needs of the market (Caves & Renold, 2018). It is extensively discussed how to involve employers in the process of developing skills.

In recent decades, including Nepal, the interaction between TVET providers and employers has attracted a great deal of attention. Employers certainly play a significant role in defining competences and ensuring the quality and relevance of TVET. As a result, the curriculum needs to be connected to Labor market to address the technical skills and job preparation requirements of companies. The curriculum created with employers' input may also help to lessen the gap between the graduates' abilities and increase their career opportunities (Bajracharya & Paudel, 2021a) and In Vietnam, a research by Tien (2009) revealed TVET providers had failed to meet the demands of employers looking for highly qualified individuals and that their curricula were too general to satisfy the demand. In this paper they were discussing about the employer's engagement in curriculum process in Nepal was cosmetic.

Thus almost all the article reviewed was discussing the employers engagement in curriculum making process, developing skills and employers are the main key stakeholders of TVET program but none of the article was taking about the employers perception about the dual vet apprenticeship program, Therefore this study will brings the real scenario of employer's perception in the Dual VET apprenticeship program.

Globally, the implementation of the Dual VET system varies across regions. In Germany, the system is well-established, with over 1.3 million apprentices enrolled annually in Dual VET programs (Rauner & Wittig, 2010a). In Switzerland, approximately two-thirds of all young people opt for a vocational training path after compulsory school (Bolli & Renold, 2019a).

In China, pilot programs based on the German model have been introduced in various provinces, though cultural attitudes towards vocational training remain a challenge (Pilz, 2016). In South Africa, the government has been increasingly

focusing on the Dual VET model to address high youth unemployment and a skills gap in technical sectors (McGrath, 2012b). In Nepal, although the Council for Technical Education and Vocational Training (CTEVT) launched the Dual VET program in 2018, the program is still in its early stages. Enrollment figures remain low, with issues surrounding employer engagement and curriculum alignment posing significant challenges (CTEVT, 2022b).

Comparing Nepal's Dual VET apprenticeship Program to Global context

The Dual Vocational Education and Training (Dual VET) apprenticeship model has been widely adopted across various countries, recognized for its ability to bridge the gap between education and employment. In countries like Germany, the Dual VET system combines theoretical learning with practical training, resulting in a well-prepared workforce. Rauner and Wittig (2010a) note that Germany has over 1.3 million apprentices enrolled annually, showcasing the program's success in reducing youth unemployment and adapting to changing labor market needs. Similarly, Switzerland emphasizes flexibility within its Dual VET framework, with around two-thirds of young people pursuing vocational training post-compulsory schooling (Bolli & Renold, 2019b). These countries benefit from strong collaborations between educational institutions, employers, and government entities, ensuring that training aligns with industry standards.

In contrast, Nepal's Dual VET apprenticeship program, initiated by the Council for Technical Education and Vocational Training (CTEVT) in 2018, faces challenges in implementation. Although the program aims to enhance employability and meet market demands, enrollment figures remain low, and employer engagement is limited (CTEVT, 2022b). Unlike the robust systems in Germany and Switzerland, Nepal's Dual VET approach struggles with issues such as curriculum alignment and insufficient support from stakeholders, which hampers the program's effectiveness. According to Bajracharya and Paudel (2021b), the Nepali context lacks the extensive collaboration seen in more successful Dual VET systems, leading to difficulties in creating a workforce equipped with necessary skills.

Furthermore, while countries like Austria and South Africa have developed their Dual VET systems to tackle youth unemployment and meet industry needs, Nepal's efforts have been impeded by cultural attitudes toward vocational training and limited awareness of available opportunities (McGrath, 2012a). The current situation reflects a need for greater investment in employer engagement and collaboration with

international development partners to enhance the Dual VET model in Nepal, ensuring it aligns more closely with the successful practices observed in other nations.

TVET System and Apprenticeship Training Approach in Nepal

The traditional apprenticeship system in Nepal was family-based and well-organized, guaranteeing the generational transfer of trade and professional skills (Paudel, 2023). In the past, moms taught girls household management skills, while dads trained sons in trades (Shrestha, 2021). The customary regulations known as Sthiti that allocated vocational positions based on caste and were affected by political situations or religious texts regulated these informal schooling activities (Sharma, 2008). King Jayasthiti Malla divided society into 64 castes and four varnas in the fourteenth century, each with a distinct set of responsibilities. The Muluki Ain and other later efforts to topple this structure failed, but the caste-based occupational system endures and continues to shape social rank in Nepal.

Traditional apprenticeship traditions were not integrated into the new contemporary education system in Nepal; instead, formal schooling was given priority (Ministry of Education, 1956). As a result, general education took precedence over specialized knowledge that neither improved social standing nor was included in the curricula of the day. Initiations such as the Butwal Training Institute (BTI) and the Mechanical Training Centre (MTC), which provided technical and vocational education through formal apprenticeships, internships, and On-the-Job Training (OJT) programs, marked the beginning of modern vocational education in the 1960s.

To supervise Nepal's Technical and Vocational Education and Training (TVET) system, the Council for Technical Education and Vocational Training (CTEVT) was founded in 1989. Through partnerships with community and private education organizations, CTEVT expanded access to both formal and non-formal TVET programs. In order to improve job preparation, CTEVT introduced a Dual VET program in a few schools after 2018. This program combined classroom instruction with real-world experience.

Dual VET Apprenticeship in Context of Nepal

In the context of Nepal, the Council for Technical Education and Vocational Training (CTEVT) introduced the Dual VET model in 2018 to align the country's vocational education system with industry needs. This model is essential for developing a skilled workforce that meets local and international labor demands (Bajracharya & Paudel, 2021c). The integration of theoretical learning and workplace

training is seen as a solution to reduce unemployment and boost the employability of young people, particularly in sectors like manufacturing, engineering, and textiles (Gessler & Howe, 2015a). Stakeholders in the Nepalese Dual VET system include educational institutions, companies, CTEVT, and development partners. These stakeholders collaborate to develop curricula, implement training, and ensure that the program meets industry standards (ILO, 2017b). The participation of employers is crucial, as they provide apprentices with real-world experience, ensuring that the training is relevant to current labor market needs (Wolter & Muehlemann, 2014). However, employer involvement remains a challenge, as companies sometimes hesitate to fully engage due to concerns about costs and the time commitment required to train apprentices (Thapa, 2018).

In the Dual VET apprenticeship program, a range of stakeholders and actors are essential to the development and implementation of the curriculum. Employers are vital in shaping the industry-specific skills and competencies that apprentices need. Their involvement ensures that the curriculum remains aligned with market demands, equipping apprentices with the practical knowledge necessary for their respective industries (Fuller & Unwin, 2017a). Vocational schools provide the theoretical foundation that complements the practical experience gained during apprenticeships. These institutions collaborate with employers to ensure that what is taught in the classroom reflects the realities of the workplace (Rauner & Wittig, 2010b). Government bodies like the Ministry of Education and local councils play a crucial oversight role. They are responsible for regulating the program, ensuring that it adheres to labor laws and national education standards, and that certifications are recognized nationwide (Deissinger et al., 2013a). Training providers, often linked to government organizations, are responsible for developing formal apprenticeship programs and monitoring their effectiveness (McGrath, 2012c).

Lastly, international development partners such as the International Labor Organization (ILO) and UNESCO provide technical support, policy frameworks, and guidance. These organizations play a pivotal role in aligning national vocational programs with global standards and best practices, facilitating capacity building and ensuring the quality of Dual VET systems (ILO, 2017c). Together, these actors collaborate to ensure that Dual VET apprenticeship programs are effective, relevant, and aligned with the needs of both employers and apprentices.

One noteworthy TVET project in Nepal is Enhanced Skills for Sustainable and Rewarding Employment (ENSSURE). The Swiss Agency for Development and Cooperation (SDC) is the representative of the Swiss government, which is collaborating with the Government of Nepal on this bilateral initiative. The initiative was initiated in 2016 with the goal of improving the skills of Nepali laborers in order to help business and industrial sectors and improve labor market results. HELVETAS Swiss Intercooperation Nepal (Helvetas) and the Council for Technical Education and Vocational Training (CTEVT) are working together to execute the Dual VET-Apprenticeship program. CTEVT is in charge of creating curricula and administering entrance and exit exams, with Helvetas offering technological support. (Bolli et al., 2019)

Yes, there are some reports and feedback available from monitoring visits and other feedback mechanisms regarding the implementation of the Dual VET Apprenticeship Program in Nepal. The Council for Technical Education and Vocational Training (CTEVT) has been involved in monitoring the program's progress and providing regular feedback on its implementation. For instance, the Enhanced Skills for Sustainable and Rewarding Employment (ENSSURE) project, which collaborates with CTEVT, conducted several monitoring visits and evaluations to assess the effectiveness of the Dual VET model in Nepal.

These monitoring activities have highlighted challenges such as limited employer engagement, issues in aligning the curriculum with industry needs, and the need for stronger coordination between stakeholders (CTEVT, 2022b). Feedback from industry partners also indicates the need for more comprehensive training for apprentices and the importance of ensuring consistency in the program's structure and delivery (Helvetas Nepal, 2021). Additionally, the Swiss Agency for Development and Cooperation (SDC), in collaboration with Helvetas, has provided several reports on the Dual VET apprenticeship model, addressing its strengths and areas for improvement based on monitoring visits and feedback from both employers and trainees.

The implementation of the Dual Vocational Education and Training (VET) system in Nepal encounters several significant challenges, despite its potential to address the skills gap between educational institutions and the labor market. Key issues include low employer participation, curriculum misalignment with industry needs, financial constraints, and socio-economic barriers that affect student

engagement. One of the main obstacles is the reluctance of employers to participate actively in the training process. Many industries are hesitant to allocate resources, time, and personnel to train apprentices due to concerns about productivity loss and the additional costs involved, which hampers apprentices' ability to gain practical experience in real-world settings (CTEVT, 2022b). Furthermore, the curriculum taught in vocational schools often does not align with the actual skills required by industries, leaving apprentices underprepared for workplace demands. This misalignment continues despite efforts to revise the curriculum (Bajracharya & Paudel, 2021a; Sharma, 2008). Financial limitations also play a role, as both businesses and educational institutions struggle to provide adequate training resources, while government funding remains insufficient to expand and scale the program effectively (McGrath, 2012a). Moreover, apprentices, especially those from lower socio-economic backgrounds, face challenges in balancing work and study, with vocational training still perceived as less prestigious than academic education in Nepal (CTEVT, 2018; Paudel & Eberhardt, 2023c). Governance and policy issues, including a lack of coordination between stakeholders and ineffective monitoring mechanisms, further complicate the scaling of the Dual VET system, highlighting the need for stronger collaboration between government, industry, and educational institutions (ILO, 2017b).

During literature review related to Dual VET apprenticeship program, there are many Journals, articles and books found related to Dual VET apprenticeship and most of the studies has covered the historical, financial and Curriculum development as well as linkage to labor market and employers involvement in Dual VET but none of them are talking about employers perception on Dual VET apprenticeship. Therefore my research is focused on understanding Employers' perspective about Dual VET apprenticeship.

Legal Provisions Supporting Nepal's Dual Apprenticeship Program

As a MTVET student I was very much excited to review the literature about legal provisions supporting Nepal's Dual VET apprenticeship Training/ Program and I found that the establishment of Nepal's Dual Vocational Education and Training (VET) apprenticeship program is underpinned by various legal frameworks and policies aimed at bridging the gap between education and the labor market. These provisions promote structured learning that integrates theoretical and practical skills to meet the demands of industries. The Council for Technical Education and

Vocational Training (CTEVT) Act (1989) laid the foundation for technical and vocational education, empowering CTEVT as the governing body to develop, implement, and monitor vocational education initiatives in Nepal (Paudel, 2023). This act reflects the government's commitment to vocational education by institutionalizing apprenticeship models that combine workplace training with classroom learning. And in the same way the legal framework supporting technical and vocational education and training (TVET) in Nepal, including the Dual VET apprenticeship model, is guided by several policy documents, including the Ministry of Law, Justice, and Parliamentary Affairs (MoLJPA) (2015), Article 51 of the constitution highlights the need for inclusive development and employment by promoting vocational education to bridge the gap between education and market needs. This aligns with the objectives of the Dual VET system, which integrates classroom education with hands-on work experience to foster skilled human capital development. The MoLJPA (2015) further emphasizes the importance of technical education, specifying the government's role in expanding access to vocational training to equip citizens with employable skills and reduce unemployment. Additionally, policy frameworks highlight apprenticeships as a pathway to address youth unemployment and skill shortages through experiential learning (CTEVT, 2022a). In the other literature I found that the integration of on-the-job training with classroom learning, facilitated by the Dual approach, reflects efforts to ensure Nepal's workforce is prepared for both local and global markets (Bhandari, 2023).

In addition, the Apprenticeship Training Guidelines (2018) introduced by CTEVT provide a legal framework for the implementation of Dual apprenticeship models. These guidelines emphasize collaboration between vocational institutions and industries, outlining the responsibilities of training providers, employers, and apprentices in ensuring structured skill development (CTEVT, 2022b). They also detail the governance mechanisms, including certification processes and funding arrangements, to facilitate effective apprenticeship training in various sectors. The Labor Act of Nepal (2017) further supports apprenticeships by recognizing the importance of skill development and encouraging industries to offer formal training programs. This act encourages employer participation by providing guidelines on wages, working conditions, and contract obligations for apprentices, ensuring that both students and companies benefit from the arrangement (Bhandari, 2023). However, the alignment of legal frameworks with the current labor market needs and

the scalability of Dual apprenticeship programs remain areas of focus for further policy reforms.

International organizations, such as the International Labour Organization (ILO), have also influenced Nepal's vocational education system. Nepal's participation in global initiatives, including the ILO's Apprenticeship Framework, has shaped local policies, ensuring the alignment of national practices with international standards (ILO, 2017b). This collaboration provides technical support to CTEVT, contributing to the development of more sustainable apprenticeship models. While reviewing the literature I came to now that the International collaborations, especially with development partners such as the Swiss-supported Enhanced Skills for Sustainable and Rewarding Employment (ENSSURE) project, provide technical assistance and reinforce the policy environment needed to expand the Dual VET model (Helvetas, 2019). These legal provisions ensure apprenticeships are structured to meet the educational and economic goals of the nation, contributing to sustainable workforce development.

Theoretical Review

The core idea of the Dual VET program is that combining classroom learning with hands-on work not only increases an individual's employability but also improves industry efficiency by creating a workforce tailored to specific needs. Deissinger et al. (2013b) argue that this Dual approach ensures that students develop the competencies required for the workforce, which directly enhances productivity and reduces skill mismatches between education and employment. The human capital theory, introduced by Becker (1964), emphasizes the value of investing in education and training to enhance individuals' knowledge and skills, thereby benefiting the economy and industries. In the context of Dual Vocational Education and Training (VET) programs, this theory aligns well with the goal of equipping apprentices with the competencies required by industries, facilitating growth, and enhancing productivity and economic value, benefiting both employers and the broader economy.

Bolli and Renold (2019a) highlight the case of Switzerland, where apprentices gain both technical and social skills, adding value to industries by immediately contributing to the workflow. This shows that investment in apprenticeship training, as proposed by Human Capital Theory, yields returns not only in personal career growth but also in organizational productivity. Fuller and Unwin (2017b) further

stress that apprenticeship systems driven by employer needs align educational outcomes with industry demands, helping to address workforce shortages efficiently.

McGrath (2012a) discusses South Africa's efforts to develop its vocational education system, showing how Dual VET reduces youth unemployment by equipping learners with marketable skills. This approach embodies Human Capital Theory by converting education into measurable economic returns, both for apprentices through increased employability and for employers through a skilled labor force. Similarly, studies in Australia demonstrate that aligning formal education with workplace training improves job readiness and addresses skill gaps, resulting in reduced recruitment costs for companies (Smith & Kemmis, 2013).

From an employer's perspective, Human Capital Theory underscores the mutual benefits of apprenticeship programs. Employers can reduce recruitment and training costs by developing talent internally, as apprentices are already familiar with company operations (Mora, 2024). Additionally, businesses experience productivity gains, as apprentices contribute to tasks while learning, aligning with the theory's focus on the economic value of skills development.

While the Dual VET system has proven effective in many countries, challenges remain in aligning education with rapidly changing labor market demands. In China, pilot VET programs based on the German model have shown potential, but cultural attitudes toward vocational education continue to limit participation (Pilz, 2016). This highlights that while the Human Capital Theory justifies investment in training, structural and cultural factors must also align to fully realize the benefits.

Chapter Summary

This chapter describes the literature review and Dual VET apprenticeship program in context of Nepal as well as theoretical review of Dual VET. The literature review highlights the Dual VET Apprenticeship program in Nepal and Global Context, as well as comparing the Nepal Dual VET with other countries practice. The chapter also contains legal provisions supporting Nepal Dual VET apprenticeship program.

The Dual Vocational Education and Training (Dual VET) apprenticeship program connects apprentices with employers, supported by training providers and organizations like CTEVT to align skills training with market demands. Globally, countries such as Germany and Switzerland have well-established Dual VET systems that combine theoretical education with practical workplace training, significantly

reducing youth unemployment and addressing industry needs. However, in Nepal, despite the 2018 introduction of the Dual VET program by CTEVT, challenges like low employer participation, limited curriculum alignment, and cultural attitudes towards vocational education hinder its success. Research indicates that employer engagement is essential for developing effective curricula and ensuring apprentices gain industry-relevant skills, yet Nepal struggles with this alignment. Studies from other countries, such as Vietnam and South Africa, highlight the importance of employer collaboration in building relevant skills through vocational programs. Nepal's traditional family-based apprenticeship practices were not integrated into modern education systems, with formal TVET institutions emerging in the 1960s. The Enhanced Skills for Sustainable and Rewarding Employment (ENSSURE) project, supported by Swiss development agencies, aims to address these challenges through policy reforms, curriculum improvements, and greater industry collaboration. Legal frameworks, including the CTEVT Act (1989) and Apprenticeship training guidelines (2018), provide a foundation for the program, but further alignment with labor market needs is required. Although Nepal participates in international initiatives, such as those led by the ILO, the country still faces difficulties in scaling Dual VET systems to match the success seen in Europe. This research emphasizes the need to understand employers' perspectives, as their involvement is critical for improving the program's effectiveness and addressing the skills gap. Theoretical frameworks like Human Capital Theory underscore the mutual benefits for employers and apprentices, but structural reforms and cultural acceptance are necessary to realize the full potential of Nepal's Dual VET apprenticeship program.

CHAPTER III

RESEARCH METHODOLOGY

In this chapter I have explain about types of research methodology used filed visit and for preparing my dissertation. I have also explained about my selection process of my research participants as well as study area. I have also shared the methodology used for data collection and analysis of data. I have also explained about the quality standard with considering research ethics.

Qualitative Research Approach

I have used qualitative research approach in my study as this approach is particularly suited to investigating employers' perceptions of Dual Vocational Education and Training (VET) apprenticeship programs because it prioritizes depth, context, and subjective experiences. This methodology enables the collection of detailed, rich data that highlights how employers perceive the program's benefits, challenges, and future opportunities. By focusing on subjective experiences, qualitative research captures insights of employers' professional and personal interactions with the Dual VET program implementation, which are essential for understanding their expectations and concerns (Creswell & Poth, 2018). Data collection methods such as semi-structured interviews provide opportunities for employers to articulate their perspectives on key issues, including alignment between training and industry requirements, financial implications, and governance structures (Miles et al., 2020).

Additionally, qualitative research emphasizes thematic analysis to identify patterns and draw broader implications from employer narratives (Braun & Clarke, 2006). The approach also considers contextual relevance, recognizing that local socioeconomic and institutional factors influence perceptions, making it particularly effective in exploring the Dual VET system in Nepal's federalized structure (Bolli et al., 2019). Despite its benefits, qualitative research is time-intensive and requires rigorous methods to mitigate researcher bias. Nevertheless, it facilitates a deeper understanding of complex phenomena, co-creation of knowledge with participants, and actionable insights to improve Dual VET programs while addressing employers' specific concerns.

Study Area

The selection of specific industries to understand the perception of the Dual VET Apprenticeship Program is guided by several critical factors. Industries such as manufacturing, engineering, and textiles are prioritized due to their reliance on skilled labor, making them ideal for assessing the alignment of vocational training with market demands (Rauner & Wittig, 2010c). Moreover, I have selected the industries involved in apprenticeship programs through partnerships with vocational schools or pilot initiatives provide valuable feedback about the training process (Bajracharya & Paudel, 2021d). The regional and economic significance of these industries also plays a role in their selection, as seen in Nepal's Morang and Sunsari regions, where manufacturing and textiles are essential to the local economy (CTEVT, 2022b). Additionally, industries that express potential to expand their apprenticeship programs offer insights for scaling Dual VET models effectively (McGrath, 2012c). Lastly, specific industry challenges, such as machinery safety and schedule alignment with academic calendars, highlight the importance of refining these programs to meet practical needs (Fuller & Unwin, 2017a). The research study area was Morang and Sunsari district, well known as Industrial area and there are so many industries practicing Dual VET apprenticeship program hence among many industries I have selected 7 industries research participants to conduct my research.

Selection of Participants

For the selection of my research participants, I have consulted with my supervisor and as per their suggestion I have reached out to Federation of Nepalese Chamber and Commerce Industries (FNCCI) and Chamber Industries Morang (CIM) of Koshi Province. I consulted with Executive director of FNCCI and Program officer of CIM of Koshi Province to support me with the list of industries practicing Dual VET Apprenticeship program. They have supported with me with list but initially I selected 10 industries but afterwards, I chose only seven out of them for in-depth discussion. I acknowledge that these participants can equip me with handful information. As selecting a few or even a single unit is sufficient in qualitative research to understand the worldview of people on certain issues (Neuman, 2006). I have selected these industries and respondents from the related industries to understand their experiences about Dual VET apprenticeship program as they all have a experiences regarding perception about Dual VET. The details of the selected industries with respondents are mentioned below:

Industry A

Industry A is an ISO 9001:2008 certified firm that operates as a fully integrated biscuit production facility with cutting edge machinery acquired from the top Indian suppliers and an ultramodern infrastructure. Industry is located in Duhabi Sunsari, Nepal. “Within the biscuit industry, our products have been successful in gaining the trust of customers and setting new international benchmarks. Our understanding of marketing has enabled us to create a strong distribution network across Nepal and a productive marketing staff” (Kwality Nepal, 2023). The industry has been using apprentice from institute and the research participant from this industry was Mr. Amar Singh, electrical supervisor and appointed as master craft person for apprentices. He has a long experience in the field of electrical engineering and severing the industry for more than a decade.

Industry B

The biggest spinning mill in Nepal is Industry B, a public limited corporation that was founded in 1994 AD. The firm operates two factories: Unit B is situated in Duhabi, Sunsari, Nepal, while Unit A is located in Khanar, Sunsari. With Ring Frame and Vortex machinery from well-known textile machinery manufacturers including Savio, Schlafhorst / Saurer, Reiter, Veejay Lakshmi, Peass, Mylon, Murata, & Aalidhra Textool, Industry B is a state-of-the-art spinning facility. The firm is a technologically sophisticated, professionally managed spinning mill that produces polyester, viscose, acrylic, cotton, and their different mixes in gray, colored, melange, and DTY yarns, all of which are of worldwide grade. With more than 4000 employees, including 1300 women, Industry B is Nepal's largest employer (Relience Spinning Nepal, 2023). The apprentices get chance to have learning on Dual VET model in this industry and institute provide them apprentice in the Electrical occupation. I met with human resources manager Mr. Pramod Kumar . He was the one who guide and keeps record of the apprentice enroll in the industry. Mr. Pramod was a foreign return with MBA degree and working as a human resource manager as well as he was also responsible for guiding the apprentices under supervisor as master craft.

Industry C

Based in Nepal, Industry C is a well-known Fast-Moving Consumer Goods (FMCG) firm with a broad focus on packaged food production. The firm has established a notable market presence with its varied portfolio, which includes a range of tasty and convenient solutions. Instant Noodles: Known for their many flavors and

simplicity of preparation, these instant noodles are a favorite among customers as a quick and easy dinner alternative. Ramen Noodles: Industry C ramen noodles have become popular among foodies due to their unique flavor and adaptability. White noodles are a flexible option for a variety of recipes since they provide a blank canvas for culinary ideas as well as other fast packed foods (Asian Thai Foods, 2023). Mr. Anish Gurng was the respondent as he was also appointed as master craft person for apprenticeship. Mr. Anish was a electrical supervisor in the industry and he was guiding the apprentices under his supervision. He has a long working history as an electrical supervisor.

Industry D

Industry D is located in Hattimuda, Morang, Nepal. The Udhyog is producing and fabricating electrical panel as well as mild steel fabrication works. The Udhyog is supporting to the Mornag, Sunasri corridor industries in the filed electrical engineering. Er. Pintu Babu is the managing director of the Mr. Pintu is an electrical engineer and he has been involved in this occupation since 20 years and serving the industries. In his udhayog the apprentices are getting high level of training in electrical engineering and Mr. Pintu himself guiding the apprentices. He also provide food and accommodation to apprentices during learning period.

Industry E

Industry E is located in in Biratnagar, Nepal. The firm serves both the domestic and foreign markets by producing a variety of jute goods. Jute is used to make mats, ropes, and bags, among other goods. It is recognized for being biodegradable and environmentally beneficial. Industry E exemplifies the integration of traditional jute processing techniques with modern technology, contributing to the economic development of Biratnagar and promoting sustainable practices in the industry (Baba Jute Mills, 2023). Mr. Ramesh Yadav was an electrical supervisor with more than 15 years in this field. He was appointed as a master craft person to mentor and coach the apprentices in the industry.

Industry F

Industry F is a manufacturer of wires and cables. The industry manufactures superior electrical items that meet the demands of both residential and commercial customers. Industry F is one of the leading industries in the electrical sector, supporting the industrial growth and development of the area (Mahalaxmi Wire Cable Industries, 2023). Mr. Umesh Rai was the respondent for my research and Mr. Umesh

was working as plant incharge in the industry. He was also guiding and mentoring the apprentices under his supervision.

Industry G

Industry G is Nepal-based Company that specializes in offering technical solutions for power distribution and generating. Their services are customized to meet the needs of both industrial and residential clients, guaranteeing a dependable and effective power supply. The company's primary goal is to integrate cutting-edge technologies with Nepal's sustainable energy solutions. This company has completed major contracts of Morang and Sunsari district and one of the major contracts was Central Mall of Biratnagar. They have completed all the electrical connection, Installation and commissioning. Mr. Ram Dai is the proprietor of the company and Mr. Ram is also working for the master craft person for the apprentices in his company. He was very simple and grounded.

Details of Research Participants and Industry (Pseudonyms)

Thus, in this research, we have altogether seven research participants representing different seven business and industries in Morang and Sunsari Industrial Corridor. A synopsis of the research participants, industry and the number of apprentices pursuing training in the particular industry is provided in Table 1.

Table 1

Research Participants and Industry (Pseudonyms)

S. N.	Research Participant	Industry Name	Address	No. of trainees
1.	Amar Singh	Industry A	Duhabi Sunsari, Nepal	3
2.	Pramod Kumar	Industry B	Duhabi Sunsari, Nepal	1
3.	Anish Gurung	Industry C	Sonapur, Sunsari, Nepal	2
4.	Pintu Babu	Industry D	Hattimuda, Morang, Nepal	5
5.	Ramesh Yadav	Industry E	Biratnagar, Morang, Nepal	4
6.	Umesh Rai	Industry F	Tanki, Morang, Nepal	2
7.	Ram Dai	Industry G	Biratnagar, Morang, Nepal	6

Data Collection

To know the exact perception of employer's about Dual VET apprenticeship program, I have engaged in the field from 6th August 2023 to 20th August 2023 to collect the stories from the research participants. I have conducted In-depth interview and used secondary source to gather information. The process is explained below:

In Depth Interview

One of the various qualitative research methods used to collect information about participants' subjective experiences is the in-depth interview. The goal is to gather comprehensive information that clarifies a person's viewpoint and the significance they assign to a certain subject, problem, or procedure (Rutledge, 2020). I have used an informal conversational approach using conversation guides to find out what my research participants were thinking and doing in relation to Dual VET apprenticeship program (Neuman, 2006). In this method I had collected data through interviewing persons who are directly linked up with the research problem.

In my first visit to the Research Participants, I had prepared a set of semi-structured questions and before I raised my question to them I have explained my purpose of the visit and their support to conduct my research, in the same time I also take their consent for audio recording to extract data. As they hardly make a visit to external. I had limited time to complete my research question. My first visit to industries was during 6th August 2023. I had first started to build rapport with the research participants so that they can narrate their findings and experiences.

I was excited to learn about the major turning moments that the research participants in the Dual-VET apprenticeship program encountered as I started my narrative journey to investigate their perspectives on it. It was fascinating and illuminating to see how curious and open-minded they were to consider their experiences from the past and current. Their willingness to share their experiences and perspectives about the Dual VET thrilled me. I have also started recording their voice for further processing. As highlighted by Creswell and Creswell (2021), my participants were informed that their voices would be recorded and later, transcribed texts were read to them to verify their responses.

Secondary Sources of Data Collection

While collecting the secondary source data I must be very careful because the secondary source data collection should match and verify the data collected from fields. In Secondary data collection I have gathered information from previously

collected by other researchers, institutions, or organizations. And as a researcher, I have used various methods and sources. I have reviewed journal articles, reports, and datasets from national, institutional archives and Online platforms such as Google Scholar or specialized portals like those of the UN and World Bank, CTEVT provide easy access to a variety of research materials as well as I have also gone through different Published literature, including books, journal articles, which had served me as a fundamental source for reviewing past research and analysis.

Data Analysis and Reporting

I was more interested to learn about the perception of Dual VET journey of my research participants' that they shared with me as I started my journey to understand their viewpoint and impressions of the program. Their interest, eagerness to reflect on their experiences, and perceptive stories reflecting their past to present was very interesting for me. When they discussed their thoughts and experiences with the Dual VET apprenticeship program, I was thrilled. In order to provide a fair and thorough transcription, I listened to their recorded audio calls several times during this process and transcribed them into English language for a fair and detailed transcription because, I have used Nepali language while interviewing my participants.

I started by introducing myself, giving a brief explanation of my research to my participants, and making sure they were prepared to participate in my study. After that, I got their permission to record and take brief notes while keeping their privacy and confidentiality in mind. In each example, our conversation lasted around minimum 30 to 40 minutes or more as per requirement of my study. After the interview, I thanked them and let them know that I would need more information for transcribing and coding my data. They were very happy and agreed to provide more information as per requirement.

I started using their words and voices to explain employers' experiences. In order to create meaning, each transcription was examined by listening to the recorded voices, and key points were noted and underlined (Creswell & Creswell, 2021). I began examining similes and metaphors after reading the transcripts and listening to the audio recordings of the interviews. Furthermore, because the employers described their experiences from the start of their involvement in the Dual VET apprenticeship program, my data was already in qualitative form and noted in the word file for further processing.

According to Employers perspectives, experiences, possibilities, and challenges with the Dual VET apprenticeship program that they have highlighted in my research study. In order to learn more about the employers perception, I decided to use the holistic-content method, which contains coding, classifying, theme-making, meaning-making process, and interpretation as stages in the data analysis process.

I listened to the recorded audio multiple times while coding, verified the sentences by transcription, and then grouped and highlighted the texts to group them under several topics for further examination and interpretation. I created themes based on their narrative, how they began, how they are preserving Dual VET program, how they are engaged with apprentices and faces challenges, as well as how they see the future of apprenticeship program in context of Nepal as I coded and categorized them to put them under different headings. Then I started to arrange the data according to research question. First I have collected data related to benefits of Dual VET apprenticeship and code it according to Industry by using pseudonyms. In the same way there is another code for future perspective of employers about Dual VET and finally I have provided a code for challenges experienced by the employers while implementing the Dual VET apprenticeship program. In addition, I reviewed over the recorded interviews and transcribed data, classified them, and arranged them under subject and content areas (Maxwell, 2012). Moreover, I have verified the qualitative principles of methodology and organized themes, which were analyzed through the holistic-content perspective identified by (Lieblich et al., 1998).

I classified the narratives under sub-themes such as apprentice perspectives, possibilities, problems, and future directions for the Dual apprenticeship program using the same methodology. I also went back and listened to the audio again, read the transcripts of the interviews again, to create a better theme to analyze the filed findings.

Quality Standards

In qualitative research, quality standards are essential to guarantee the validity, dependability, and trustworthiness of the results. Establishing credibility through methods like triangulation and verification, which entail cross-checking data and confirming findings with participants, is one of these requirements (Stenfors, 2020). The consistency of research findings over time is referred to as dependability, and it is attained by keeping a record of all research activities for the purposes of

review and repetition (Mays & Pope, 2020). Therefore I have extract the data of recordings and categories it according research question.

Conformability, which is supported by careful documentation and reflective journals that reveal the researcher's opinions and biases, guarantees that findings are affected by participants rather than researcher bias (Stenfors, 2020). In order to determine if research findings are applicable in different contexts, transferability requires giving detailed explanations of the study setting (Jarrahi, 2024). In order to be reflexive, I have constantly considered their role, biases, and interactions with respondents (Mays & Pope, 2020). I had also followed the ethical guidelines of KUSOED, which include getting informed permission, maintaining participant confidentially, shielding them from harm, and being open and honest about ethical issues at every stage of the study process (Lumsden, 2022).

Research Ethics

I have followed strict ethical rules required for this personal investigation in order to safeguard participants and guarantee the validity of the study. As we know that informed permission, participant respect, confidentiality, validity in data analysis, and managing power relations and trust are the main ethical issues in qualitative research (Hecker & Kallgren, 2023).

Respecting participants involves recognizing and honoring their dignity, rights, and perspectives. I have engaged with research participants in a manner that is respectful, culturally sensitive, and non-exploitative. This ensure that participants' voices are accurately and fairly represented in the research findings (Hecker & Kallgren, 2023). Ethical research requires a commitment to accuracy and honesty in data analysis and reporting. I have striven to present their expression truthfully and without bias which involves rigorous data validation, transparent documentation of the research process, and careful interpretation of the data to avoid misrepresentation (Mirza & Bouzidi, 2023). Qualitative research often involves close interactions between researchers and participants, leading to potential power imbalances. I was aware of these dynamics and work to build trust and rapport with participants. I had also reflective about their own positionality and how it may influence the research process and outcomes (Mirza & Bouzidi, 2023). I acknowledged my participants for their time and efforts. Finally, I abode by the Kathmandu University Research committee guidelines while conducting the entire research work.

I am also accountable for continuously monitoring ethical aspects throughout the research and addressing any issues that arise promptly (Laryeafio & Coleman, 2023).

Chapter Summary

This chapter describes the research methodology using of narrative inquiry approach, and I have captured employer perspectives, allowing deep insights into their experiences with the program. The study was conducted in Koshi Province, focusing on seven industries across Morang Sunsari districts, each contributing to the practical training of apprentices. Selection of research participants is also discussed in this chapter with process of data collection for stories and data analysis and reporting. Through in-depth interviews, I have gathered stories from research participants, building rapport to elicit detailed insights. Data collection began in August 2023, with interviews transcribed and analyzed. The research adhered to quality standards like triangulation, dependability, and transferability. In this chapter I have also explained about Ethical considerations, including informed consent and confidentiality, were maintained throughout.

CHAPTER IV
PERSPECTIVE OF EMPLOYERS ON BENEFITS OF DUAL VET
APPRENTICESHIP PROGRAM

This chapter describes the perspective of employers on implementation of Dual VET apprenticeship. I went to the industries after selection of research participants, I called them to inform security in the main gate so that I could get permission to enter in the industries as outsiders are not allowed. As I was referring from FNCCI and CIM, I got entrance permission in the gate. I called the research participants to meet at a point for discussions. First of all I greeted them and introduced myself to him. They were excited to listen to me as I mention about my dissertation and some of them were excited to listen about my MTVET course. I tried to build communication with them and stated my discussion with my background in engineering and how I started to pursue MTVET program in Kathmandu University. I took permission to record their voice for further use while writing dissertation. With their permission I started to record and begin with the research questions. Different research participants have different perspective on the benefits of Dual VET and they are listed below.

Workforce and Skill Development

During my visit to from Industry A, I had to travel from Janakpur to Duhabi, Sunsari district as I had a conversation with Mr. Amar Singh and booked a time to have a meeting with him. He has already informed the gate guard about my visit. The guard took me to the waiting room but there was too much noise of industry machine. Mr. Amar Singh came to meet me in the meeting room, but it was very noisy, and I was unable to introduce myself. I spoke loudly and asked if we could go outside to any place where we can have tea or coffee because here it is so noisy, and I need to record the conversation. He agreed to go started to give my introduction outside in the tea stall. It was a regular place for him to have tea during break. He called the tea staller for two cups of tea and I started to introduce myself and the purpose of my visit. I took permission from him to record the conversation. He was an electrical supervisor and also a master craft person (a person who supervise the apprentice in the industry) for apprentices in the industry. He was serving the industry for more

than a decade. During our interaction I asked him to share how he has perceived the Dual VET program and he said that,

“Apprenticeship programs significantly benefit industries by helping them develop a skilled workforce. These programs are essential for long-term industry growth, as they ensure employees acquire relevant skills. Therefore, investing in the training and development of apprentices is a strategic move. It enables businesses to cultivate workers who meet the specific demands and quality standards of their sector” (Amar Singh, August 6, 2023).

During my visit to Industry E, I called the manager for an allocation of time and he called me on 20th August 2023 to meet him. Again, I travelled from Janakpur to Biratnagar one day before so that I could meet him in next day morning. I went to the industry and I asked the guard to call manager to inform about my visit. The guard asked me to wait outside the gate. After some time, the guard called me and said that *“the manager room is upstairs please go and wait for him”*. He was a very busy man. After some time he came to the room where I was waiting for him. I introduced him about myself and my purpose of visit. He picks up his phone and called Mr. Ramesh Yadav and he told me that Mr. Ramesh Yadav is appoint as Mastercraft person for apprentices and he will share his experiences about Dual VET program. The manager was very gentle, and he also asked me for tea. In the same time Mr. Ramesh came there and we had brief introduction to each other. He was very excited to share his experiences on implementation of Dual VET program. I took permission to record the session before he started his story. There were altogether four apprentices, and they were doing very well. I asked him about the benefits of Dual VET program, and he mention that, *“Equipping participants with key career skills through Dual VET programs enhances their personal growth while also contributing significantly to the progress and modernization of the industry”*. (Ramesh Yadav, August 20, 2023).

Similarly, my visit to Industry G, August 6th, 2023, to Mr. Ram Dai. He called me in Biratnagar near one of his construction site. I went there and I was waiting for him in a small shop and asked the shopkeeper to give me a biscuit. He came after some time, and I offered him coke and we were sitting on a bench. I started to give my introduction and share my purpose of my visit. I asked him to give permission to start recording the conversation. He was very fond of the Dual VET apprenticeship program because the nature of the company was to take contacts in buildings for electrical setup where he required number of apprentices at a time. He believes that

the students under Dual VET training can meet the engineering sector workforce requirements. While listening to his conservation in my recording, he mentions that,

“Apprenticeship model provides hands-on experience and technical training, preparing individuals to meet the complex demands of the power engineering sector. The apprentices in our industry gain practical knowledge and skills that are directly applicable to labor market” (Ram Dai, August 6, 2023).

My visit to Industry B on August 13th, 2023. It was very difficult as to get a gate pass over there was very difficult and we can also consider the biggest industry of Sunsari Morang district. I called FNCCI so many times to get pass and connect with the research participants. After gate pass, I met with the general manager, and he suggested to meet Mr. Pramod Kumar. After that I met Mr. Pramod Kumar in his office. First, I introduced myself and my objective to meet him and he was very happy to see that a student gathering filed data for dissertation. He was very excited and asked me to submit a copy of the dissertation when it is completed. After a long conversation with him I got permission to record our conservation for further use. It was the first time the industry to allow Dual VET apprenticeship training and he was happy to share his perspective on Dual VET training. Mr. Pramod Kumar has said that *“The Dual VET Apprenticeship Program benefits students by offering hands-on learning opportunities, equipping them with essential skills. Additionally, it enables these students to become significant assets across various industries” (Pramod Kumar, August 13, 2023).*

Similarly, my visit to Industry C on August 13th, 2023. After many times of conservation with Mr. Anish Gurung, he gave me time to meet me in the industry as he was very busy that day. I met him after he called the gate guard to allow me to sit in the meeting room. I explained the purpose of my visit to him, he agreed to have a conservation with me. After setting a scene between us I asked him about the benefits of the Dual VET program, which places a strong emphasis on fostering practical skills and expertise among its employees, which is critical for the dynamic food industry. He mentions that,

“The program helps students build hands-on skills, enhancing their employability while equipping them with essential knowledge to use in multiple industries. A key aspect is how the program collaborates directly with industries, where apprentices significantly contribute to daily operations and

productivity, creating a win-win relationship for both the apprentices and the industries involved” (Anish Gurung, August 13, 2023).

As per my understanding, Industry A, E, G and C are getting similar benefits from implementation Dual VET apprenticeship program. I also feel that implementation apprenticeship program develops skilled workforce as per the nature of the program because the apprentices get both skills and knowledge at the same time from institute and industries.

Financial Savings and Cost-Effectiveness

Mr. Amar Singh’s from Industry A has got another benefits of Dual VET Program and during our conversation it was found that the financial savings and cost effectiveness was another benefits of Dual VET apprenticeship program and how strategic workforce management can significantly reduce the financial burden associated with hiring full-time employees. This approach not only cuts down on expenses related to recruitment, training, and salaries but also optimizes resource allocation, ensuring that the workforce is highly efficient and capable. Mr. Amar Singh mentioned that, *“the Dual VET program develops skilled labor, reducing the need for costly full-time hires. Through their involvement, apprentices become essential to daily operations, balancing their learning with meaningful contributions to the industry. (Amar Singh,, August 6, 2023).*

Similarly, Mr. Ram Dai from Industry G also have other benefits as he had already mention that workforce and skill development was one of the benefits and now again he found that Dual VET has similar another benefit as Mr. Amar Singh from Industry A has explained. He was very happy sharing that,

“The company brings apprentices into their workforce, providing practical training that prepares them for complex technical roles without needing to spend heavily on hiring experienced workers. This strategy ensures a steady supply of skilled staff while also lowering overall labor costs”. (Ram Dai, August 6, 2023).

Industry Growth and Impact

Again, further discussion with Mr. Amar Singh from Industry A, he has also got the third benefit from Dual VET program. Before he explains his third benefit, the mobile starts ringing and he takes his call. I was waiting for him to come back to the conversation. After ten minutes he came back to me asking to complete the

session quickly. I turned on the recording and started the conversation and Mr. Amar Singh mentioned that,

“Industries can grow by focusing on education and skill-building programs like Dual VET apprenticeships. These programs help industries train skilled workers who are ready to meet changing market demand. By participating, industries can ensure a regular flow of qualified employees and reduce hiring challenges, which supports the industries development over time”. (Amar Singh,, August 6 , 2023).

Again, from Industry G with Mr. Ram Dai, As he was directly involved with the apprentices, he treated them as professional workers and trained them very wisely so that he can use them as a worker in coming days. He was very happy with the Dual VET program as he got good benefit from apprentices as per the nature of his company. While sharing third benefit he mentioned that ,

“Apprenticeships are important for helping industries grow steadily. They give learners hands-on experience, allowing them to develop the skills needed for real jobs. This not only builds a capable workforce but also prepares these individuals to solve specific challenges in their field confidently.”. (Ram Dai, August 6, 2023).

In my understanding employers understand the importance of Dual VET of apprenticeship programs in their industries and how it is useful in bridging the skills gap, supporting economic growth, and ensuring the long-term sustainability of various industries. Industry A, Industry D, and Industry G, these three industries research participants have expressed their thoughts on how Dual VET was used for industrial growth and its impact on industries. While I was listening to my conversation with these research participants, they all have the common understanding on implementation of Dual VET has a good impact on industry with its growth as they can use the apprentices as a worker after some months of training and on the other hand they don't have to pay them as an employee.

Mutual Benefits and Employment Opportunities

During my visit to Industry D, I called Mr. Pintu Babu to give me time for the discussion about my research. He gave time August 13th, 2023 in the morning. When I visited his industry as per his given time, he was waiting for me in his office. I introduced myself and explained my purpose visit. He also gave his introduction, and he mentioned that that he was engaged in this sector for more than 2 decades and by

professional he was an engineer. My education background matched his educational background, so he was very happy to meet me. After taking his permission to record the session, I started to ask him about the perception of Dual VET and how he is getting benefits from it. He smiled and said that industry like us need more and more apprentices because we fabricate electrical panel as well as mild steel fabrication works and for this, we need to export human resources from India. So, we have many benefits from the Dual VET program. Recently our industry has offered six apprentices to get training over here. We provide food, Shelter and minimum amount as per rules of this program. And he mentioned that *“that their industry contributes significantly to mutual benefits and employment opportunities by offering job placements and financial support to outstanding students”*. (Pintu Babu, August 13, 2023).

On the other had I remember that while discussing with industry C, Anish Gurung has also shared other benefits of Dual VET that, Dual VET helps students and industries work together. It gives students practical experience, preparing them for real-life tasks. At the same time, it ensures they gain the right skills to find jobs while meeting the industry's need for skilled workers.

Collectively in my understanding all the industries have got benefit from the Dual VET apprenticeship program. Some of the industries were talking about workforce and skill development through the implementation of Dual VET while others were talking about financial savings and cost effectiveness as the industry has not to pay apprentices as they pay to their regular staff for the same work. Yes, I agree that in the beginning industries must invest on the apprentices to train them technically and professionally for some months and after that industry can use them as a staff without paying full scale salary or incentives. In the same way other industries mentioned that they have a good impact and industrial growth with mutual benefits and employment opportunities after implementation of Dual VET program. In my opinion Dual VET have these kinds of benefits after listening to research participants as the Apprentices get skilled, hands-on training for their career and industries utilize them as a worker during the program period. This shows that they both have mutual benefits from each other.

Employers’ Future Perspective of Dual VET Apprenticeship Program in Nepal

In my first part of my conversation with the research participants in the different industries, I was focusing on getting the data on the benefits of the Dual VET

apprenticeship program. All the research participants have shared their perspectives on benefits of Dual VET program. Now in this second part I am going to discuss the employer's future perspective of Dual VET and how they see Dual VET program in future. To get this information I have continued the conversation with research participants. The employer's perspective is explained below:

Skill Development and Employability

My conversation was going very well with Mr. Pramod Kumar from Industry B, as he has already shared about the benefits of Dual VET. Now I was focusing on my second part to know his perspective on future of Dual VET in context of Nepal. As he has already mentioned the benefits of Dual VET, he has good feeling about Dual VET future in Nepal. He was talking about how apprentices built their skills very fast through this type of program and when some are skilled, it is easy for them to get job opportunity in the market. He mentions that *"The Dual VET Program offers a great opportunity for apprentices to build strong careers. During the 19-month training, participants actively work in industry and gain practical experience. This hands-on involvement helps them quickly find jobs once the program is completed."* (Pramod Kumar, August 13, 2023). He was also talking the after the completion of program our industry it provide them work opportunities if they agree our terms and conditions.

In the same way I started recalling that other industries have the same kinds of perception about Dual VET. Then I remember that Mr. Anish Gurung of Industry C has also the same kind of understanding. In my second part of conversation with Mr. Anish Gurung, he was talking that program like Dual VET has good future in Nepal. As we are living in developing countries and this type of program supports in many ways as I have already explain about the benefits and he mention that,

"This program stands out by providing students not only with hands-on instruction and practical skills but also exposure to real-world industry scenarios. These multifaceted approaches contribute greatly to the formation of skilled workforce, playing an instrumental role in placing the groundwork for the employability". (Anish Gurung, August 13 ,2023)

In the same way while discussion with Mr. Ramesh Yadav from Industry E, on his perspective on Dual VET furniture in context of Nepal. He saw a very bright future of Dual VET and sharing that we are in requirement of such program, our industry itself provide employment opportunity after completing program because we

have invested our time and resources to train them throughout the program period. He was also talking about the three tiers of government where each ward from the local government can give job opportunities to such apprentices for the maintenance or installation work. He mentions that,

“The Dual VET program understands the need for skilled workers in both growing and established industries at different levels of government. To address this, I suggest placing at least one technician in every ward of local government. This approach ensures that training matches the labor needs of different areas and industries and employment opportunities will also rise” (Ramesh Yadav, August 6, 2023).

Economic and Industrial Benefits

While my discussion with Industry B, Industry C and Industry E has mentioned their perspective on the future of Dual VET and has shared that the Dual VET helps for skill development and provides employment opportunity, these three industries have same views on the future of Dual VET in context of Nepal. On the other side while my discussion with Mr. Pintu Babu from Industry D, he was also sharing that the Dual VET program helps apprentices to get job opportunity as they have got skills during the training but he was concerned about the other future of Dual VET and during our conversation he was sharing that Dual VET is very economic for both student and industry as students don't have to pay for the course and industry also gets benefits from students using them as full-time employees. So the future of Dual VET program can rise and he mentioned that, *“the future of Dual VET apprenticeship programs in Nepal is seen as bright, with significant potential to contribute to both individual career growth and industrial development”*. (Pintu Babu, August 13, 2023). Mr. Pintu was also talking about the Dual VET program that can motivate the domestic labor or the graduates who are willing to participate in Dual VET.

In the same way while discussing with Mr. Ramesh Yadav from Industry E, he was very happy to share his experiences on the Dual VET future in context to Nepal. He was sharing that our industry has got benefits from this program which I have already mentioned in our first conversation. As our industry is big and we import skilled human resources from India, programs like Dual VET in the future can reduce this type of problem and our local human resources can be trained and employed. He mentions that, emphasizes that,

“Industry like our often rely on importing workers because they don’t have enough skilled local human resources. Apprenticeship programs aim to fill this gap by training local workers with the skills needed, helping the economy grow by reducing the need to hire from outside and meeting the demand for skilled labor” Ramesh Yadav, August 20, 2023).

During our discussion with Mr. Ramesh was will to take more apprentices to train them and use them for their industry. He was willing to invest his time and resources in apprentices to build their career. During my conversation I feel that he has see the future of Dual VET and understood it importance in coming days.

As per the findings from industry D and Industry E on their perspective of Dual VET program, I remember that Mr. Ram Dai from Industry G, mention that, *“Apprentices may earn less than regular employees, but our industry values their important role in supporting the workforce”*. During the interaction with Mr. Ram Dai I also understood that employers proudly invest in apprentices, recognizing them as internal contributors that not only aid in cost-saving but also raise the cultivation of skilled professionals, thus adding substantial value to the business.

Chapter Summary

The chapter explores the benefits and future perception of employers from implementing the Dual VET apprenticeship program. Different research participants from different industries have mentioned the benefits of Dual VET. According to employers Dual VET develops workforce and skill development, with companies like Industry A, Industry E, and Industry G mentioning its role in producing a workforce designed to industry needs. Second, it provides financial savings and cost-effectiveness, as employers like Industry A and Industry G have mentioned that the Dual VET program reduced recruitment and training expenses. Third, the program drives industry growth by offering well-prepared employees that meet evolving market demands. Finally, the program promotes mutual benefits and employment opportunities, offering students practical skills while fulfilling industry labor needs. Overall, the Dual VET program is a valuable tool for creating skilled labor, reducing costs, and supporting industry growth and competitiveness.

The chapter highlights an positive future for Dual VET apprenticeship programs in Nepal. Research participants from different industries give Dual VET program’s important role in workforce development and economic growth. Employers view these apprenticeships as important for developing practical skills, boosting

employability, and addressing the skills gap in various technical and manufacturing industrial sectors. As per the perspective of employers, the Dual VET program is seen as a solution to local labor shortages and a driver of long-term industrial growth. Additionally, Employers support for extreme apprentices' engagement to develop skilled technicians across all sectors, supporting the future potential of the Dual VET apprenticeship program.

CHAPTER V
EMPLOYERS' CHALLENGES IN IMPLEMENTING DUAL VET
APPRENTICESHIP PROGRAM

In this chapter I put my third portion of findings from the research participants. As per my research question first I had a deep conversation with research participants on benefits of Dual VET apprenticeship program and secondly, we had a conversation on employers' future perspective of Dual VET apprenticeship program in context of Nepal. Then lastly, I had conversation on employers' challenges while implementing Dual VET. So, this chapter explains the employers' challenges faced during implementation of Dual VET program. After completing my first and second portion of conversation with research participants, I tried to divert my conversation with them to find out how they see Dual VET in coming days. Some of the challenges faced by the employers while implementing the Dual VET program are listed below:

Inexperience and Skill Gaps

After a long conversation with Mr. Amar Singh from Industry A, I changed my conversation towards the challenges he was experiencing during the implementation of Dual VET. Yes, he agreed that even after many benefits from Dual VET we do have faces the challenges. He shared his story that at the time admission of apprentices they are completely new for the industry and its system, we need to teach team from zero level. He mentioned that *“Apprentices usually don't have industrial experer, so they can't start working efficiently right away. Because of this, companies need to spend more time and effort on training and supervising them, which can put extra pressure on the company's resources”* (Amar Singh, August 6, 2023).

With my conversation Mr. Umesh Rai of Industry F about the challenges he faced during implementation of Dual VET, He was also talking about the apprentices who must get more knowledge and skills before they should come to industries. Training institutes must provide some real-world experience before sending them to industry. As Dual VET program first three months training in the institute and then they send them to the industry, but the training apprentices get during three months are not enough for them to handle the basic. He mentions that, *“Initially three months training to apprentices are often too short for apprentices to learn and perform difficult tasks properly. Because of this, they may make more mistakes and have*

trouble meeting the high-quality standards needed in technical jobs” (Mr. Umesh Rai, August 6, 2023). He was also concerned that the skills provided by institutes are not sufficient to meet the need of technical works in the industries. Finally, he concluded that Dual VET program nature should adjust the methodology as per the industry demands.

During my conversation with Mr. Ramesh Yadav of Industry E, he talked about safety concern about the apprentices as they don't have any kind of prior experience of handling industrial equipment. He was sharing that one of the apprentices was fasting on Tuesday and he fainted during work, so these kinds of incidents are happening. So, the apprentices must have basic training and skills before entering to the industry. He said that *“Apprentices need good basic skills, otherwise, they will struggle with difficult industrial tasks, which can lead to safety problems and lower productivity” (Ramesh Yadav, August 20, 2023).* Similarly, he shared that sometimes we need to invest more time in training them as they are very new to the industrial environment.

Equipment and Safety Concerns

While having a conversation with Mr. Pramod Kumar from Industry B, I remember that he was also concerned about the safety protocols of the industry. He was sharing that we need programs like Dual VET and industry get benefits from the implementation of Dual VET, but Apprenticeship programs introduce several challenges for employers, particularly concerning equipment and safety. The apprentices are young and inexperienced with industrial machines and if anything happens to them, then it will be very difficult for the industry to handle as well as it will also affect the production section in case of damage to instruments. Mr. Pramod Kumar B Says that *“expert in our industry is concern about equipment damage and mishandling of machinery by new apprentice due to which it might leads to heavy equipment repair cost and also disturb production process” (Pramod Kumar, August 13th, 2023).* Therefore, institutes must give them basic safety protocols and industrial machine handling training to the apprentices before introducing them to industrial practice.

While conversation with Mr. Ramesh Yadav from Industry E, He was also sharing his experience with apprentices during the task performing time in the industry, he mention that, *“we need to teach them from the beginning of practical things and we cannot rely on them to complete any small task Individually and we*

have to be with them all the time during working hours” (Ramesh Yadav, August 20, 2023). To make Dual VET apprenticeship program successful, the apprentices must get necessary industry safety protocols training which will support both the industry and apprentices for smooth operation of Dual VET.

Scheduling Conflicts

While conversation with Mr. Pintu Babu of Industry D in my third portion to known about their challenges on implementation of Dual VET, he has already mentioned other challenges, but his next challenge was scheduling conflicts. He was talking that Dual VET program nature is to learn both in industry and at the institute at the same course duration which sometimes creates problems for industry, as we have already plan and schedule for them in the industry to conduct a regular work but in the same time they have to visit institute to get theoretical knowledge which disturb the work of industry. Additionally, he mentions that, *“sometimes during the peak production period or specific maintenance period, may clash with apprentices academic activities which disturb the coordination with apprentices” (Pintu Babu, August 13, 2023).* These scheduling conflicts provide stress to apprentices as well as industry management and reduce learning efficiency of apprentices. He was also worried about the travelling plan of apprentices from industry to institute once a week. He suggested that the solution of this challenge could be better coordination with industry to plan a schedule or provide a theoretical session in the industry.

Low Participation and Motivation

On my continued conversation with Mr. Pintu Babu of Industry D, he again mentions that low participation and motivation of apprentices was another challenge for him. He was sharing that the Dual VET program is new to this generation of young students and its duration is long too. The apprentices are unaware about the benefits of the Dual VET program to their career, so we also need to provide motivational training to the young apprentices about the career path through Dual VET. He mentions that,

“Now a days young individuals are interested in earning fast with low skills which is not sustainable and Dual VET program is long term, in apprentices need to work without full salary payment and sometimes they get demotivated as compared to other regular staff. This kind of demotivation can be obstacle to Dual VET program” (Pintu Babu, August 13, 2023).

He also shares that these days everyone has a social life and influences with social media and which creates problems to industry. We need to motivate and follow up to apprentices time again to come to industry for their sessions. Sometimes only providing challenges is not enough so I was engaging more to know the mitigation of the challenges during the implementation of Dual VET program and in our conversation he was talking about trainings of life skills, career counselling and social perspective must be provided to apprentices during the course period which will guide their career path and motivate them to achieve their goals.

In the same way I had a conversation with other industries research participants, and other have mention their challenges as a low participants and motivation of apprentices. To know more about the challenges, my conversation with Mr. Pramod Kumar of Industry B, has also mention that apprentices come two to three days in week which is a very low participations in the program and it has to be address by the institute to motivate them for regular attendance. On the other hand Mr. Anish Gurung, from Industry C, was also sharing his experience that the low participants of apprentices is one of major challenges and it also affects the development of skills in the apprentices as well as it also disturb the industrial regular works.

Chapter Summary

This chapter presented problems and challenges that employers experienced in implementing the Dual VET Apprenticeship program. The implementation of Dual VET Apprenticeship programs presents several challenges for employers. A key issue is the inexperience and skill gaps of apprentices, as highlighted by Industry A, where extensive training and supervision are required to make apprentices ready for workplace. Industry E also talks about the need for apprentices to gain a deep understanding of industrial operations, while Industry F, points out that short training periods often leave apprentices weak prepared for complex tasks. Furthermore, equipment damage and safety concerns arise from apprentice mishandling, as shared by Industry B and Industry E. In the same way Scheduling conflicts between Institutes and Industries further complicate the program's effectiveness, as observed by Industry D. Lastly, low participation and motivation, driven by social attitudes and immediate financial needs, remain significant hurdles for sustaining the program's success.

CHAPTER VI

DISCUSSION ON FINDINGS

In this chapter I discuss my findings from field with other literature. In first part this chapter will discuss on the perspective of employers on the benefits of Dual VET apprenticeship program and compare with related literature and in the same way in second part of this chapter I compare the employer's perspective on future of Dual VET with other literature and finally third part compare the employers' challenges during implementation of Dual VET program in their industries with other literature. And in each section I share my opinion by comparing the findings.

Perspective of Employers on the Dual VET Apprenticeship Program

In this part I will be comparing the findings from the industries on Perspective of Employers on the Dual VET Apprenticeship Program, in the context of workforce development, studies highlight that Dual VET apprenticeship programs are crucial for bridging the skills gap. Research from Bremer and Larsen (2020) demonstrates that apprenticeships help align educational outcomes with industry needs, much like findings from Industry A and Industry B highlight the creation of a skilled labor force. Similarly, Grollmann (2015) discusses the significance of vocational training in developing industry-specific competencies, affirming that hands-on learning is a vital component of skill development for both businesses and apprentices by highlighting that apprenticeship programs bridge the skills gap by aligning educational outcomes with industry needs, a principle central to Human Capital Theory. The experience of employers in Nepal reports these studies, where industries benefit from a steady supply of workers equipped with necessary technical skills. In the same way, Employers in Nepal, from Industry G, share the financial efficiency of training apprentices, which aligns with findings (Kuczera & Field's, 2018b). Their research indicates that apprenticeship programs reduce recruitment costs and long-term training expenses by inserting learners into the workflow early. The structured on-the-job training significantly lowers operational costs compared to traditional education, with apprentices contributing to productivity at lower wages initially and supporting the Human Capital theory's claim that skill acquisition leads to measurable economic returns for both workers and employers.

On the other hand the role of Dual VET in promoting industry growth is widely supported by literature. According to Rauner et al. (2013), apprenticeship systems not only address immediate labor shortages but also drive innovation and long-term industry growth. The integration of apprentices into industries as seen with Industry B and Industry C, illustrates the program's capacity to foster sustainable industrial growth by ensuring a skilled workforce. This aligns with Euler (2015), who argues that vocational education enables continuous industrial development by improving workforce readiness and innovation potential. While talking about aligning training with market needs and boosting productivity is a recurrent theme in employer perspectives. Research by Powell and Solga (2018) indicates that apprenticeship programs are designed to meet the ever-evolving needs of industries by providing sector-specific skills. Industry B and Industry C similarly highlight the relevance of apprenticeship training to improving productivity and maintaining competitive advantage, which echoes the findings of Ryan (2020) that apprenticeships ensure a steady pipeline of skilled workers.

The other discussions on the mutual benefits between apprentices and businesses, as mention by Industry D, reflect findings from Muehlemann and Wolter, (2017a), who argue that apprenticeships provide a win-win situation. Apprentices gain employable skills, while businesses benefit from reduced labor costs and a future pool of well-trained employees. This reciprocal relationship reinforces the overall value of apprenticeship models in improving employability while reducing hiring risks for businesses.

In my understanding the employers have benefits of Dual VET apprenticeship program in many ways, Industries can utilize the apprentices as workers with low investment in the beginning but afterwards they can get back their investment by using apprentices as a full-time worker with minimum wages. As Muehlemann and Wolter (2017b), they mention that apprenticeships provide a win-win situation. I also support this statement because the apprentices also get themselves skilled without huge investment on education and they can confirm their employability as well as industry can use them as a regular employee till the end of the program which also support the Humam Capital Theory principal.

Employers' Perspective on Future of Dual VET Apprenticeship Program in Nepal

In this part I am going to discuss on the findings from employers in Nepal regarding the employer's perspective on future of the Dual Vocational Education and Training (VET) apprenticeship program align with global research, which highlights the importance of such programs in fostering workforce development and supporting industry growth. In comparison with international literature, these insights reflect a shared understanding of the value of apprenticeships in addressing skills gaps and preparing the workforce for future challenges.

Therefore, the Employers from Industry A, Industry E, and Industry G highlight the critical role of the Dual VET program in aligning education with industry needs. This perspective is constant with findings from studies such as those by Deissinger et al. (2013a), who argue that Dual apprenticeship systems serve as effective mechanisms to bridge the gap between theoretical education and practical industry requirements. By integrating classroom learning with on-the-job training, these programs enable apprentices to develop relevant skills that match the evolving demands of the labor market, ensuring that education is directly connected to employment outcomes. In the same way, the ability of the Dual VET program to enhance productivity and workforce adaptability, as mentioned by Nepali employers, mirrors global findings. Rauner and Smith (2010c) explain that Dual apprenticeship programs contribute to increased productivity by preparing workers with the skills needed to meet industry standards while fostering adaptability through continuous skill development. This adaptability is particularly crucial in sectors like manufacturing, where technological advancements require workers to update their skills regularly. The focus on hands-on training in real-world settings, highlighted by employer of Industry C, aligns with international research showing that practical experience is key to workforce readiness. Furthermore, the adaptability and productivity benefits of the Dual VET program mentioned by employers confirm findings (Rauner & Smith, 2010). These authors argue that apprenticeship systems not only prepare individuals to meet immediate industry needs but also foster continuous skill development, which is essential in technology-driven sectors like manufacturing. The emphasis on real-world, hands-on training highlighted by Industry C aligns with Human Capital Theory's assertion that practical experience significantly enhances workforce readiness and economic productivity. Such training ensures that education

investments yield measurable economic and social returns, addressing both industry demands and workforce development.

On the other hand, Nepali employers' recognition of the Dual VET program as a driver for industry-specific growth, as indicated by employer of Industry E, also resonates with global literature on the subject. Schneider (2019) argues that Dual apprenticeship systems are crucial for industries seeking to expand by creating a pipeline of skilled labor that meets specific sectoral needs. This is particularly relevant in emerging economies like Nepal, where skilled labor shortages often lead to reliance on foreign workers. By providing localized solutions, such as positioning technicians in each ward of as local government proposed by Industry E, the Dual VET program has the potential to not only boost national employment but also reduce dependency on external labor markets, thus supporting national economic growth. And the findings from Industry B and Industry C that emphasize the program's role in improving employability and meeting industrial demands are strongly aligned with global perspectives. According to Muehlemann and Wolter (2017b), Dual apprenticeship programs equip participants with industry-relevant technical skills, which significantly improve their employability and career prospects. These programs not only address current labor shortages but also provide industries with a sustainable workforce that can adapt to future needs.

In my opinion the developing country like Nepal has the shortage of skilled workers in the industries and in this case the Dual VET apprenticeship program will work as a pain killer to the industries. The Dual VET apprenticeship program develops skilled human resources as per the requirement of industries because the training is completely work based on learning and I can say that we are preparing the future skilled human resources in the labor market. Therefore, I am seeing a very good future of Dual VET program in context to apprentices as well as industries.

Employers' Challenges in Implementing the Dual VET Apprenticeship Program

In this part I am going to discuss the challenges faced by employers in implementing the Dual Vocational Education and Training (VET) Apprenticeship Program, which are reflective of broader issues documented in global research. From gaps in apprentice skills to logistical complications, these issues resonate with international findings that highlight the complexities of integrating academic and workplace training in apprenticeship systems. Industry A highlight on resources required to train inexperienced apprentices. This is a common issue in apprenticeship

programs globally. Gessler and Howe (2015b) discuss that the additional time and resources required for on-the-job training can burden employers, especially when apprentices come with little practical experience. The need for intense supervision often disrupts regular operations, as companies must allocate significant resources to ensure that apprentices meet industry standards. The findings align with these concerns, supporting the need for improved pre-apprenticeship training to improve employer burdens.

In the same way the concerns raised by employer from Industry F, regarding short transition periods that leave apprentices not ready for industrial work. Baethge and Arends (2009) argue that in many apprenticeship systems, insufficient transition time between learning and practical application results in apprentices being inadequately prepared to manage complex tasks. This gap in preparation often leads to mistakes and slower productivity in the early stages of employment, as inexperienced workers are required to quickly adapt to real-world industrial demands. Employers around the world, like those in Nepal, advocate for extended training periods to address this gap. This gap reinforces Human Capital Theory's emphasis on structured, extended training to maximize workforce readiness.

The safety concerns expressed by employer from industry B, potential machinery damage due to apprentice inexperience are well-documented in literature. Zwick (2020) points out that apprentices often lack the technical knowledge to handle complex equipment, increasing the likelihood of accidents and costly repairs. Employers are hesitant to assign apprentices to high-risk tasks without adequate supervision, as this not only affects production efficiency but also elevates workplace safety risks.

On the other side the scheduling conflicts noted by employers from Industry D, where apprentices struggle to balance institute and industrial work, are common in Dual apprenticeship programs. Bosch and Charest (2008) highlight that the misalignment between educational schedules and workplace demands is a frequent source of tension in Dual VET systems. Additionally, the declining participation among youth, driven by the perception that vocational training is less valuable than academic education, is a growing concern globally. Bussemeyer and Trampusch (2012) found that vocational education is often struggling in many countries, leading to lower enrollment and a talent drain, particularly in sectors requiring technical skills. As well as the Employers across various industries, such as employer from Industry E, call for

improved collaboration between educational institutions and industries to enhance the effectiveness of the Dual VET apprenticeship program. This sentiment aligns with the global consensus that successful Dual apprenticeship programs require strong partnerships between vocational schools and industries. Rauner and Wittig (2010b) emphasize that such partnerships are essential for ensuring that apprentices receive training that is both academically sound and practically relevant. Coordinated efforts between the educational sector and industry ensure that apprentices are better prepared to meet the demands of the workforce upon completion of their training. Together, these insights emphasize that while Human Capital Theory underscores the long-term benefits of education and training, addressing its practical limitations is critical to the sustainable success of apprenticeship programs.

In my understanding, there are many benefits for Dual VET apprenticeship Program as well as the program has good future too. But even after the good future and better benefits the Dual VET has challenges too. Employers from different industries have almost the same challenges faced during the implementation of the program. I also agree that in the beginning apprentices do not have minimum exposure of industrial workplace due to which there are skills gaps due to which industry may suffer from equipment damage and safety concern. It not only hampers the industry but sometimes it is harmful to health of apprentices. And as per the nature of Dual VET program, scheduling conflicts must occur during the program implementation so I think industry and institutes must finalize the schedule as per industry needs. But sometimes I also think that these kinds of challenges should be normal to the employers as the apprentices are the learners not the workers. The challenges can be solved gradually after training in the industries.

CHAPTER VII

SUMMARY, CONCLUSION AND IMPLICATIONS

Summary

This chapter provides an in-depth examination of the background, problem statement, significance, purpose, and research questions guiding the study of the Dual VET Apprenticeship program in Nepal. The program, introduced by the Council for Technical Education and Vocational Training (CTEVT) in 2018, integrates classroom education with workplace training to align vocational education with industry needs. Historically, vocational education in Nepal targeted school dropouts, but the modern apprenticeship system aims to fill the skills gap and better serve industries. However, employer participation remains limited, a central issue that this study seeks to address by examining employer perceptions of the program in the Morang Sunsari Industrial Corridor. The study focused on critical aspects like employer benefits and perception on future of Dual VET as well as challenges faced during implantation of Dual VET. The literature review contextualized the Dual VET Apprenticeship program in Nepal, focusing on labor market alignment and future of Dual VET. While prior studies highlight the roles of apprentices, employers, and supporting organizations, they overlook the employers' perceptions, a gap that this research addresses. Traditional apprenticeships in Nepal were family-based, passing skills through generations, but modern vocational education began in the 1960s, with CTEVT established in 1989 to oversee technical and vocational training. Despite the introduction of the Dual VET program in 2018, weak employer engagement persists, and this research sought to understand whether employers' perception to participate in the program.

The methodology employed in this research is narrative inquiry, focusing on employers' roles in Dual VET apprenticeship programs. The study, conducted in Koshi Province, involves seven industries across Morang and Sunsari districts, where apprentices receive practical training. Through direct in-depth interviews, the researcher collected detailed narratives from participants, building rapport to gain insights into their experiences. Ethical standards, including informed consent, confidentiality, and methodological accuracy, such as triangulation, dependability, and transferability, were upheld throughout the research process.

Key findings from this chapter highlight the benefits employers from the Dual VET Apprenticeship program, focusing on workforce and skill development, financial savings, industry growth, and helping mutual benefits. Companies like Industry A, Industry E, and Industry G emphasize the program's role in producing a skilled workforce tailored to industry needs. The program also reduces recruitment and training costs, as noted by Industry A and Industry G, while contributing to industry growth by providing well-prepared employees that meet evolving market demands. Additionally, companies like Industry B and Industry C recognize the program's capacity to boost productivity and fulfill industry labor needs, offering mutual benefits to both employers and apprentices.

Looking forward, this chapter presents an optimistic view of the future of the Dual VET Apprenticeship program in Nepal. Industry leaders stress the program's importance in workforce development and addressing local labor shortages. Companies like Industry A and Industry E see the program as essential for imparting practical skills and boosting employability, crucial for long-term industrial growth. Employers advocate for deeper student engagement and national strategies to integrate skilled technicians across sectors, reinforcing the Dual VET model's potential for economic advancement in Nepal. However, the chapter also identifies challenges in implementing the Dual VET Apprenticeship program. Employers cite apprentice skill gaps, resource constraints, and Safety issues as obstacles. Inexperience and the need for extensive supervision slow the process, while scheduling conflicts between academic and work commitments complicate the program's effectiveness. Finally, low motivation and participation, driven by immediate financial needs and social attitudes, pose hurdles to sustaining the program's success. By comparing Nepali employer experiences with global research findings, the study underscores the need for stronger collaboration between educational institutions and industries to address these challenges and optimize the Dual VET model for Nepal's vocational education landscape.

Conclusion

The Dual VET Apprenticeship programs implemented by Industries highlight the importance of Dual VET training in Nepal's industrial development. The Dual VET program have many benefits such as workforce and Skill development, financial savings and cost effectiveness, Industrial Growth as well as Mutual benefits and employment opportunity and on the other hand Dual VET has optimistic future in

skill development and employability with economic and Industrial benefits. I also understood that the training periods and practical exposure equip apprentices with the necessary competencies to confidently transition into the workforce. These types of Programs are crucial in ensuring that Nepal's workforce is competitive, adaptable, and prepared to support industrial growth. In the same way my conclusion aligns strongly with Human Capital Theory, which suggests that investments in education and training enhance the productivity and adaptability of the workforce, thereby contributing to economic growth.

Moreover, Industries highlight the Dual VET benefits of these apprenticeship programs for both employers and apprentices. The programs not only provide employers with a cost-effective means to develop skilled workers but also offer career-building opportunities that enhance their employability in various industries. And this aligns with the Human Capital Theory's view that education and training are investments generating returns in the form of higher earnings for individuals and increased productivity for employers.

Despite challenges such as the Skills gap, Inexperience Safety concern, Scheduling conflicts as well as low participation and motivation of apprentices, industries remain committed to nurturing a highly skilled workforce. The emphasis on investing in apprentices, as seen in the efforts of Industries, reflects a broader recognition of the importance of sustained support for vocational training. These initiatives are essential for addressing Nepal's skills gap and ensuring sustainable industrial development, as they help retain a talented labor force that contributes to both economic growth and technological advancement and this validates Human Capital Theory's emphasis on the long-term economic returns of vocational training investments. Even with the huge benefits and optimistic future of Dual VET in Nepal, long term investment is require and all the actors must come under one roof to make success of Dual VET program.

Implications of Study

The findings of the research highlight the critical role these initiatives play in closing the skills gap in Nepal. These programs demonstrate that well-structured Dual Vocational Education and Training (VET) models are vital for aligning educational outcomes with industry demands, especially in developing countries like Nepal. Despite challenges such as equipment damage, irregular attendance, and Safety concern, the positive outcomes in terms of skill development, employment, and

workforce integration cannot be overlooked. This highlights the need for policymakers and educational institutions to strengthen their collaboration with industries to ensure that apprenticeship programs continue to contribute to workforce modernization and reduce reliance on imported labor. The success stories from companies suggest that when adequately supported, apprenticeship programs can drive both individual and national economic development by creating a competent and capable workforce.

Moreover, the active participation of companies shows the importance of adapting these programs to meet the evolving needs of the labor market. The focus on extending training periods and increasing student engagement highlights the necessity for continuous refinement in the structure and delivery of apprenticeship programs. By addressing issues such as declining student interest and improving candidate selection processes, these programs can play a transformative role in Nepal's industrial and economic future.

My research on the implementation of Dual Vocational Education and Training (VET) programs in Nepal serves as a valuable foundation for comparative studies, providing a benchmark for researchers in other developing countries to examine similar training models and cross-country differences. By addressing challenges from my findings contribute policy recommendations that could strengthen VET systems and guide future researchers to explore alternative strategies in varying contexts. Additionally, my work lays the groundwork for examining the long-term impacts of Dual VET on employment, economic growth, and skill development, inviting further exploration like skill development and employer satisfaction. Moreover, by identifying successful practices and areas for improvement, my research encourages innovation in Technical and Vocational Education and Training (TVET), inspiring studies on industry partnerships, and sustainability-focused vocational skills.

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APPENDIX

Interviews Checklist

1. Visit Date:
2. Name of Industry:
3. Address of Industry:
4. Respondent identity: Name, Position, work experiences
5. Total Number of experiences of enrolling Dual VET Apprentices:
6. Total Number of Apprentices present:
7. How do you perceive the Dual VET Apprenticeship Program?
8. What are the Benefits of the Dual VET Apprenticeship Program?
9. How do you get benefits from the Dual VET apprenticeship program?
10. How do you envision the future of Dual VET apprenticeship program in Nepal?
11. What are the challenges in implementing Dual VET apprenticeship programs?