STUDENT DROPOUT IN DIPLOMA IN CIVIL ENGINEERING: A CASE STUDY OF KATHMANDU VALLEY

Indra Mani Dhakal

A Dissertation

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AN ABSTRACT

of the dissertation of *Indra Mani Dhakal* for the degree of *Master in Technical and Vocational Education and Training (MTVET)* presented on *19 January 2025* entittled *Student Dropout in Diploma in Civil Engineering: A Case Study of Kathmandu Valley.*

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Prakash Kumar Paudel, PhD

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The thesis titled "Student Dropout in Diploma in Civil Engineering: A Case Study of Kathmandu Valley" analyses the causes of high dropout rates in Technical and Vocational Education and Training (TVET) diploma programs especially civil engineering courses offered by the Council for Technical Education and Vocational Training (CTEVT) in Nepal. However, the enrollment has been encouraging, but most of the students drop out due to academic difficulties, socio-economic factors, and organizational factors. Learning problems especially in the core subjects such as mathematics, physics and chemistry are compounded by shift from Nepali medium to English medium education, resulting in students dropping out of school. In addition, there is no institutional support such as remedial classes and counseling among the students which leads to dropout. Pressure from friends, financial problems, and a belief that there are few jobs available after the diploma also contribute to students' dropout.

This research adopts an interpretive research approach to examine how the factors like academic difficulties, socio-economic factors, and organizational factors affect dropout rates and the views of the students who have dropped out of the program. The study employs a case study method to explore challenges that students encounter academically and personally. Furthermore, the study looks at the dimensions of dropout, such as male students dropping out in larger numbers; female

students having their own problems, such as gendered discrimination in the labor market. The results suggest that there is a dire need of changes in the different components of TVET programs, especially in the curriculum, mode of instruction used in teaching-learning, and institutional support to students. To increase retention and student success, gender-sensitive policies, improvement in the teaching learning modes, and career counselling are suggested in the study. According to the study, the factors mentioned above can be tackled in a comprehensive manner in order to minimize dropout rates and increase the relevance of TVET programs to the labor market. Through effective institutional support and practical learning opportunities, the TVET institutions can increase the student retention and overall program quality especially in the diploma civil engineering discipline.

…… 19 January 2025

Indra Mani Dhakal

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शोध सार

विकास अध्ययनमा स्नातकोत्तर डिग्रीको लागि इन्द्रमणी ढकालको शोध प्रबन्धको शीर्षक "डिप्लोमा सिभिल इन्जिनियरिङमा विद्यार्थीले अध्ययन छाड्ने: काठमाडौं उपत्यकाको घटना अध्ययन" ६ माघ २०८१ मा प्रस्तुत गरिएको थियो।

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प्रकाश कुमार पौडेल, पिएचडी

शोध निर्देशक

शीर्षकको शोध प्रबन्धले प्राविधिक शिक्षा तथा व्यवसायीक तालिम परिषद् अन्तर्गत संचालित डिप्लोमा कार्यक्रमहरू विशेष गरी डिप्लोमा सिभिल इन्जिनियरिङ विषयमा विद्यार्थीहरुको उच्च छाड्ने दरका कारणहरूको विश्लेषण गरेको छ । यद्यपि, डिप्लोमा सिभिल इन्जिनियरिङ विषयमा भर्ना उत्साहजनक रहेको छ, तर धेरै विद्यार्थीहरू शैक्षिक कठिनाइहरू, सामाजिक-आर्थिक कारकहरू, र शिक्षालयका कारकहरूका कारण अध्ययनलाई बिचैमा छोड्ने गर्दछन् । नेपाली माध्यमको शैक्षिक पृष्ठभुमीबाट अङ्ग्रेजी माध्यमको शिक्षामा प्रवेशका कारणले विशेष गरी गणित, भौतिकशास्त्र र रसायन शास्त्र जस्ता मुख्य विषयहरूमा सिकाइ समस्याहरू थपिएका छन्, जसले गर्दा विद्यार्थीहरूले विद्यालय छाड्ने गरेका छन् । थप रूपमा, त्यहाँ कुनै संस्थागत समर्थन छैन जस्तैः उपचारात्मक कक्षाहरू र विद्यार्थीहरूका लागि परामर्श, जसका कारण विद्यार्थीहरु विद्यालय छाड्ने गर्दछन् । साथीभाइको दबाब, आर्थिक समस्या र डिप्लोमा गरेपछि थौरै जागिरहरूको उपलब्धता हुने भन्ने मनसायका कारणले पनि विद्यार्थीहरूलाई विद्यालय छाड्ने कुरामा थप सहयोग पुर्याएको छ ।

यी कारकहरूले कसरी विद्यालय छाड्ने दरहरू र कार्यक्रम छोडेका विद्यार्थीहरूको विचारलाई प्रभाव पार्छन् भनेर यो अनुसन्धानले व्याख्यात्मक अनुसन्धान दृष्टिकोण अपनाउँछ । विद्यार्थीहरूले शैक्षिक र व्यक्तिगत रूपमा सामना गर्ने चुनौतीहरूको अन्वेषण गर्न अध्ययनमा गुणात्मक घटना अध्ययन विधि प्रयोग गरिएको छ । यसबाहेक, अध्ययनले विद्यालय छाड्ने आयामहरू हेर्छ, जस्तै पुरुष विद्यार्थीहरू ठूलो संख्यामा विद्यालय छोड्ने र महिला विद्यार्थीहरूका लागि श्रम बजारले लैङ्गिक भेदभाव गर्ने जस्ता समस्याहरू छन् । यस अध्ययनको नतिजाहरूले विशेष गरी TVET कार्यक्रमहरूमा पाठ्यक्रम, भाषा र शिक्षालयहरूमा प्रणाली परिवर्तन आवश्यकताको सुझाव दिन्छ । विद्यार्थीहरुको विद्यालय टिकाउ दर र विद्यार्थी सफलता बढाउन, लैङ्गिक-संवेदनशील नीतिहरू, सुधारिएको शैक्षिक प्रक्रिया तथा विधि र वृत्ति परामर्शको सुझाव दिइन्छ । अध्ययनका अनुसार विद्यालय छाड्ने दरलाई न्यूनीकरण गर्न र श्रम बजारमा TVET कार्यक्रमहरूको सान्दर्भिकता बढाउन माथि

उल्लेखित कारकहरूलाई व्यापक रूपमा समाधान गर्न सकिन्छ । प्रभावकारी संस्थागत सहयोग र व्यावहारिक सिकाइ अवसरहरू मार्फत, TVET संस्थाहरूले विशेष गरी डिप्लोमा ईन्जिनियरिङ् विद्यार्थीहरुको विद्यालय टिकाउ दर र समग्र कार्यक्रमको गुणस्तर बढाउन सक्दछन् ।

..... ६ माघ २०८१

इन्द्रमणी ढकाल

उपाधी उम्मेदवार

This dissertation entitled *Student Dropout in Diploma in Civil Engineering: A Case Study of Kathmandu Valley Master in Technical and Vocational Education and Training (MTVET)* presented by *Indra Mani Dhakal* on *19 January 2025.*

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I understand that my dissertation will become part of the permanent collection of Kathmandu University Library. My signature below authorizes the release of my dissertation to any reader upon request.

…… 19 January 2025
Indra Mani Dhakal
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DECLARATION

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

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DEDICATION

I dedicate this dissertation to my father, Tilak Ram Sharma Dhakal, and mother, Dropadi Dhakal, who always inspired me to pursue my higher educational degree and use the knowledge I shall gain from it to contribute to the advancement of society. This is also a dedication to my wife, Renuka Neupane, who never stopped encouraging me to achieve my best in my life and to never give up hope because faith and belief have the power to constantly make a difference in circumstances. Lastly, I dedicate this to my sons Abhiru Mani Dhakal and Abhista Mani Dhakal who were there by my side and encouraged me for the completion of this work.

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I would truly value the support, tolerance, and encouragement of my wife in carrying out this research. Equally, I am thankful to Mr. Narayan Shrestha for editing the English language and maintaining the APA guidelines of the dissertation. Finally, I thank all my colleagues at Kathmandu University for their insights and suggestions. I express my sincere gratitude to the KUSOED faculties, including the administrative and library staff, for their kind co-operation during my study.

Indra Mani Dhakal,
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ABBREVIATIONS

CCH	Child Care Home
CTEVT	Council for Technical Education and Vocational Training
GPA	Grade Point Average
MTVET	Master of Technical and Vocational Education and Training
OECD	Organisation for Economic Co-operation and Development
OOSC	Out of School Children
PAC	Perceived Academic Control
PBL	Problem-Based Learning
SSRP	School Sector Reform Program
STEAM	Science Technology Engineering Arts Mathematics
TSLC	Technical School Leaving Certificate
TSSP	TVET Sector Strategic Plan
TVET	Technical and Vocational Education and Training

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CHAPTER I
INTRODUCTION

The Council for Technical Education and Vocational Training (CTEVT) is the apex body for Technical and Vocational Education and Training (TVET) in Nepal, established in 1989 to produce a competent workforce through the provision of skill-oriented and demand-driven training programs (CTEVT, n.d.). It offers many programs in health, engineering, forestry, animal science, forest science, etc. among which diploma in civil engineering is one of them. Every year, many students enroll in the Diploma programs of the Council for Technical and Vocational Education and Training (CTEVT), expecting to secure better career opportunities. In the 2018/19 academic year, for the quota of 5465 for the diploma in civil engineering, 10718 appeared in the entrance examination. However, only 4439 were registered in the first semester (Baral, 2023). Although a sufficient number of applicants apply for the program, the total quota is not occupied at the time of registration. For instance, in the 2018/19 academic year, 10,718 students applied for the Diploma in Civil Engineering, but only 4,439 were registered for the first semester, leaving a significant portion of the quota unutilized (CTEVT, 2020). Similarly, in the 2019/20 academic year, while the number of applicants rose to 11,000, the total registration dropped further to 4,100 (Baral, 2023). This indicates a gradual decrease in student retention at the registration phase over the years. Moreover, a significant number of students drop out of the program before graduation, with dropout rates reported to range between 8% and 13% annually (CTEVT, 2020). This dropout phenomenon raises concerns about various underlying factors contributing to the issue.

Studying in TVET programs requires investment and commitment; indeed, against this unwavering effort, a significant percentage of students do not complete the course, which indicates some critical problems in the system. Yao et al. (2017) pointed out economic reasons as one of the major reasons for dropout. However, this study has focused on exploring various reasons for such a phenomenon, keeping the aspects of economic causes for later sections.

Furthermore, several factors are presumed to affect dropout rates in engineering courses of TVET programs (Badroodien & Garisch, 2024). The issue of dropout is very prominent in the indicated courses. Some of the factors that were

foreseen to affect this phenomenon include a wide range of curriculum coverage, teaching methodology, academic background of the students, and socio-economic conditions. The curriculum in these programs often covers a broad array of complex subjects, which can overwhelm students, especially those who lack a strong foundation in the prerequisite topics.

Likewise, teaching methodologies, which may rely heavily on traditional lecture-based instruction, often fail to engage students who might benefit from more practical, hands-on learning experiences. The academic background of the students is another critical factor-many student entering TVET programs come from educational systems with weak foundational knowledge, particularly in major subjects like mathematics and science, making it difficult for them to cope with the demands of the engineering curriculum (Shrestha, 2023). Additionally, socio-economic conditions play a significant role, as financial pressures, family responsibilities, and the need to work part-time can all interfere with students' ability to focus on their studies. None of these reasons, however, has been conclusively proven through empirical evidence, highlighting the need for further detailed inquiry (Badroodien & Garisch, 2024).

The dropout phenomenon seriously affects the economy of institutions, students, and government eventually. It furthers creates a ripple in the finances of the society and government sectors, adversely influencing individual students' personal employment possibilities and financial comfort (Yao et al., 2017). A significant number of financial resources is allocated to TVET programs each year. For instance, the Nepalese government invested approximately NPR 3 billion in technical education and training in 2020 alone, which includes funding for infrastructure, instructor training, and student scholarships (CTEVT, 2020). According to the college data, each student invests the amount ranging from Rs. 90,000 to Rs. 3,40,000 for three years as college fee. Despite this investment, a large proportion of students do not complete their education to a graduate level, leading to an underutilization of these resources. This concerning phenomenon underscores the need to examine the underlying causes of student dropout to ensure the effective use of financial resources and enhance program outcomes.

A variety of reasons are considered for students to drop out mid-semester without completing courses. The examples include difficult curriculum, disintegration of support systems, and personal financial constraints (Badroodien & Garisch, 2024). A proper look at the declining number of regular students who appear for the

examinations showcases insights into dropout phenomena within those TVET institutions. For example, from the data analyzed about the number of students appearing for examinations at the diploma level, the enrolment for the academic year 2018/19 decreased by around 350 once they reached the fourth semester-that is, in two years (Dhakal, 2023). This decrement represents a dropout rate of approximately 13% per year in the Diploma engineering program.

Statement of Problem

The primary issue addressed in this research pertains to the dropout rates among students enrolled in Technical and Vocational Education and Training (TVET) diploma programs in Nepal, particularly in engineering courses administered by the Council for Technical Education and Vocational Training (CTEVT). Despite increased enrollment in TVET programs, a significant proportion of students fail to complete their diploma studies successfully. For instance, while 10,718 students appeared for entrance examinations for CTEVT's Diploma in Civil Engineering program in the 2018/19 academic year, only 4,439 were registered in the first semester, and dropout rates ranged between 8% and 13% annually over three years (CTEVT, 2020). Failure rates in engineering courses are even more alarming, with 41% to 67% of students failing during the first three semesters due to challenges in science-related subjects such as mathematics and physics (Shrestha, 2023).

This high dropout rate has significant implications. Left unaddressed, it undermines the objectives of Nepal's TVET system, which aims to create a skilled and technically competent workforce to meet labor market demands. Dropouts represent not only a waste of financial resources for both the government and families but also exacerbate the existing gap between supply and demand for skilled professionals in Nepal's labor market. This contributes to issues such as underemployment, low productivity, and dependency on foreign labor markets.

Furthermore, the problem is compounded by systemic challenges, including an overly extensive curriculum, teaching methodologies that fail to engage students, and insufficient institutional support mechanisms (Ngcobo, 2009). These challenges leave students, particularly those with weak foundational knowledge, struggling to meet academic expectations. If these issues persist, TVET programs risk being viewed as ineffective, thereby discouraging enrollment and contributing to the broader societal undervaluation of technical and vocational education.

The primary issue lies in the complex interplay of academic, institutional, and socio-economic factors that contribute to high dropout rates. Academically, students face significant challenges in core science-related subjects like Mathematics, Physics, and Chemistry, often attributed to weak foundational knowledge from their earlier schooling. These academic struggles are exacerbated by an extensive and theoretical curriculum that fails to meet the practical and hands-on learning expectations of students, particularly those transitioning from the TSLC (Technical School Leaving Certificate) program. As noted by Ngcobo (2009), extensive curricula in technical education often overwhelm students, leading to disengagement and dropout.

Institutional factors further compound the problem. Many TVET institutions lack the necessary support systems, such as remedial classes, academic counseling, and language support, to address the diverse needs of students. Additionally, the teaching methodologies employed are often outdated and theoretical, with limited opportunities for practical applications and real-world training. As Faisal et al., (2023) highlights, the inability of educators to adapt their teaching strategies to meet the varying requirements of students significantly impacts retention rates. The absence of structured institutional interventions, such as mentorship programs and job placement service, further isolates students from the education system.

Socio-economic factors also play a pivotal role in driving dropout rates. Financial instability, high opportunity costs associated with pursuing further education, and the societal undervaluation of TVET programs discourage students from completing their studies. As Gaffoor and Bijal (2019) observed, the economic pressures faced by students, combined with the perception of limited returns on investment in technical education, force many to abandon their studies in search of immediate employment or alternative career paths.

This issue is exacerbated by systemic challenges, including gaps in TVET policies and the misalignment of curricula with labor market demands. The lack of gender-sensitive measures and support for marginalized communities further compounds the problem, as these groups face additional barriers to completion and employability in male-dominated fields like civil engineering. These structural deficiencies hinder the TVET system's ability to retain students and fulfill its role as a key driver of workforce development in Nepal.

The dropout phenomenon raises critical questions about the effectiveness of Nepal's TVET policies, institutional practices, and the overall state of technical

education. Why do students fail to complete their diploma programs? How do academic, institutional, and socio-economic factors interact to influence dropout rates? What reforms are needed to address these challenges effectively? These questions underline the urgency of conducting an in-depth analysis to understand the root causes of dropout and identify evidence-based solutions to enhance student retention.

Addressing these issues is crucial to improving the relevance and effectiveness of TVET programs in Nepal. Without targeted interventions, the dropout phenomenon will continue to hinder the development of a skilled workforce, reduce the economic returns on educational investments, and compromise Nepal's ability to compete in a globalized economy. This study seeks to investigate the root causes of these dropout rates and provide actionable recommendations to enhance student retention and the overall quality of TVET programs.

Purpose of Study

The purpose of the research was to explore the characteristics and the causes for the dropout of the TVET students.

Research Questions

1. What are the characteristics of student dropout in diploma in civil engineering program?
2. How do students perceive the reasons for their dropout?

Significance of Study

Drop-out in TVET and the actual context of TVET education that is supporting the dropout in diploma in civil engineering are some of the major challenges and issues. According to CTEVT (2020), large numbers of students who enroll in the diploma civil program are unable to complete their studies; hence, they are trying to account for high drop-out rates. This phenomenon wastes the financial investments that students and their families make while limiting seats would affect their overall efficiency for the remaining part of the academic year.

Skilled labour demand has, no doubt, been increasing lately. Government, public, and private sectors are investing considerably in technical education. However, operating technical programs, especially those under the cloak of CTEVT, is a costly affair (Khanal et al., 2014). The majority of institutions receive a pittance in the way of government-assisted funding. This financial frailty is often exacerbated

by students' failure to attend or withdraw mid-program, directly affecting program revenue and efficiency.

The high dropout rate in technical education forms a critical challenge for TVET institutions (Khanal et al., 2014). In light of this, these institutions underutilize resource capacities and, consequently, lack effectiveness in accomplishing their mandates. This study addresses a significant gap by identifying actionable insights into the causes of dropout, which will help CTEVT and affiliated institutions develop strategies to reduce dropout rates and improve student retention. The findings will be particularly useful for policymakers in designing targeted interventions that align TVET programs with labor market needs and address socio-economic barriers to completion.

Future researchers can build upon this study by exploring related aspects of dropout prevention in other technical disciplines or educational contexts, thereby expanding the understanding of this critical issue. At the practical level, this research provides a deeper understanding of the dropout phenomenon and offers evidence-based recommendations to enhance institutional support systems, improve curriculum design, and introduce gender-sensitive policies. These measures will ultimately contribute to a more effective and inclusive TVET system that meets the needs of students and the broader labor market.

Delimitation of the Study

This research focused on the dropout issues in the TVET institutions offering diploma civil engineering programs. Specifically, the study concentrated on understanding the dropout phenomenon of the student who have dropout from registration to the end semester. This will focus to the research provided a more detailed analysis of when and why students choose to leave the program.

Organization of Study

The study is organized into seven chapters. The first chapter, Introduction, outlines the background of the study, statement of the problem, research questions, purpose, significance, and delimitations. The second chapter, Literature Review, examines relevant literature, theoretical frameworks, and the conceptual model, highlighting the research gap related to student dropout in TVET programs. The third chapter, Research Methodology, details the research design, study area, participants, data collection methods, data analysis techniques, and ethical considerations. The fourth chapter, Characteristics of Dropout, analyzes the demographic patterns and

phenomena in dropout rates, identifying key characteristics of students who leave the program. The fifth chapter, Perceived Causes of Dropout, investigates the academic, socio-economic, linguistic, and institutional factors contributing to dropout. The sixth chapter, Discussion on Key Findings, synthesizes the study results, compares them with existing literature, and discusses the implications of the findings. Finally, the seventh chapter, Conclusion and Implications, summarizes the study, draws conclusions, and provides recommendations for policymakers, practitioners, and future researchers.

CHAPTER II
LITERATURE REVIEW

Introduction

This chapter provides a comprehensive review of the literature relevant to the study of student dropout in Technical and Vocational Education and Training (TVET) programs, particularly in diploma-level engineering courses. It explores existing studies on dropout causes, theories, and conceptual frameworks that analyze the phenomenon. The chapter also reviews policies and strategies addressing student retention and identifies gaps in the current body of knowledge. The review sets the foundation for understanding the factors contributing to dropout and guides the study in identifying actionable solutions to improve student retention in Nepal's TVET system.

Students who formally withdraw or leave without notifying the institution are considered as dropouts. These students, who do not complete their course during a semester, contribute to a significant challenge for educational institutions. Program retention and completion are critical issues as they can potentially impact a country's financial stability, including both the employability and financial well-being of individual students (Gaffoor & Bijal, 2019).

The current scenario of high unemployment rates, migration for foreign employment, and increasing drug abuse among youths are major issues linked to student retention and dropout. As highlighted by Hodgson et al. (2008) and Pianta, et al. (2012), social engagement and support during the first year of college are significant factors in retaining students. However, in the context of TVET education, dropout must be examined not only as an institutional issue but also as a consequence of various socio-economic and personal factors that uniquely affect students in these programs.

Lamb (2011) provides a conceptual model of the factors affecting dropout and completion, summarizing them into four dimensions: individual attribute which include the student's personal setting and background characteristics, such as gender, age, race, financial position, self-esteem, self-efficacy, and health. Secondly,

Institutional Context**,** which encompasses family and other social networks, school structure and organization, policy setting, class size and composition, student-teacher ratio, teaching styles, attributes, and resources.

Likewise, Dispositions, which includes attainment, dropout, and completion rates, as well as the decisions made by young people regarding their education. And lastly, Institutional Responses, which involves how institutions respond to these challenges through policies, support systems, and other interventions (Lamb, 2011).

Such a model provides a conceptual framework for understanding dropout phenomena in the context of TVET education in Nepal. Lamb's conceptual framework gives the basis for looking at the many elements involved in student attrition in TVET. It goes into characteristics, for instance, institutional environments and responses that present a holistic review of the academic, socio-economic, and personal factors influencing dropout rates in Nepal's diploma engineering courses. Such a theoretical perspective facilitates an understanding of the dropout phenomenon at play, where targeted intervention is required to address the various challenges presented by students. Ultimately, addressing these factors holistically will be crucial in developing effective retention strategies and improving the overall success rates of TVET institutions in Nepal.

Dropout and Its Causes

The low levels of completion and high failure rates cause poor retention and throughput rates in TVET. Papier (2009) indicates the factors like lack of social integration into, or adaptation to, the college environment, failure to make new friends, program workload based on the number of subjects and the duration of classes, inability of lecturers to facilitate students' learning, and lectures who were unprepared influenced the poor performance of students. Hillmert and Jacob (2003), signify that individual decision-making, discretion, and weighing up options form part of every student's educational process. These influence their persistence with respect to completion and hastening entry into the labor market. The effect of individuals not completing their program contributes to the lingering stigma attached to TVET and the perception that it is of low quality when compared with mainstream education (Hillmert & Jacob, 2003). Most students consider general education to be their first choice and TVET education to be their second choice. TVET college students, however, had a positive attitude toward TVET, to their actual exposure to the program, and to career-path progression (Needhan & Papier, 2011).

In their study, Martinez and Munday (1998) pointed out that factors like not being placed in the most appropriate program, and therefore being less satisfied, applying too late, not making friends easily, being less satisfied with the teaching quality, and being less satisfied with their program timetable had influenced students' decision-making process with regards to early college departure. In a study of engineering programs (mechanical, electrical, and civil), students left their college and program early because of personal factors, that is, as a consequence of either their own actions or those of their parents (Ngcobo, 2009). A study by Faisal et al., (2023) of civil engineering students in South Africa established that delayed external examination results, theoretical overload in the program structure, college and program expectations not being met, and socio-economic conditions and influences are the reasons for the early departure of the student from their program.

The study of student attrition and retention underwent a significant shift in the 1970s, moving from a purely psychological focus to a broader understanding that encompasses the relationship between individuals and their environment. This shift emphasized the importance of the learning environment and the students' intentions to complete their programs (Tinto, 1993). A turning point for the development of the theory of retention was represented by Tinto (1975), which proposed the concepts of academic and social integration, according to which the student's decision either to drop out or persist is conditioned by his state of integration into the institution.

Bean and Metzner (1985) expanded on Tinto's theory by focusing on nontraditional students, asserting that external factors like financial pressure, family responsibilities, and work commitments play a more significant role in dropout rates than academic or social integration. This theory is particularly relevant in the context of TVET students, who often juggle economic challenges alongside their studies. For example, many TVET students come from low-income backgrounds and face pressures to contribute financially to their households, which leads to them prioritizing work over education (Bean & Metzner, 1985).

Spady (1971) elaborated on Durkheim's (1961) hypothesis and wrote that "when one student perceives themselves as lacking the values and sentiments of a certain social system and is not supported by, or integrated into, the school setting, feelings of hopelessness should occur that may result in dropping out." As seen below, Spady's theory points out institutional support systems play a significant role in student persistence. Yet, while Spady's framework is instructive, it risks

oversimplifying dropout behavior by anchoring it too narrowly within the domain of social integration rather than considering other mechanisms that could account for dropout decisions, such as economic pressures or poor academic preparation.

Tinto (1993, 1997) revised his theory to "place greater emphasis on the interaction between the student's commitments and institutional commitments". According to him, greater institutional support and more substantial institutional commitments reduce the dropout rates of students. This thinking by Tinto signifies the rise of an adaptive institutional ecology: one that changes with and for students. However, there is a need to look into the adequacy of such practices in solving some of the peculiar problems the students face in the course of pursuing the TVET program in Nepal.

Only partially in disagreement, Tinto's retention theory (1997) does not place the responsibility of success totally on individual students; his model suggests that responsibility for student success needs to be shared with the institution, something very relevant for TVET education where the playing role of institutions is critical in the form of providing enough resources, a relevant curriculum, and supportive teaching methodology to the students. As Laskey and Hetzel (2011) mentioned, institutions that do not support their students properly are more likely to have these students quitting, especially those who may already be at-risk either socio-economically or even academically.

While extensive literature exists on student dropout and retention, much of the focus has been on the individual and institutional factors affecting student persistence, emphasizing social integration and academic support. However, there is a noticeable gap in the specific exploration of TVET programs, particularly in the context of Nepal. Most of the existing research focuses on traditional educational institutions without considering the unique challenges TVET students face, such as the mismatch between curriculum design and practical skill demands, socio-cultural stigmas attached to vocational education, and the lack of alignment between TVET training and labor market needs. Moreover, limited attention has been paid to how institutional policies in Nepal can effectively address the socio-economic and academic barriers that disproportionately affect TVET students. This research aims to fill these gaps by examining the distinct factors contributing to dropout in TVET engineering programs and proposing targeted interventions to improve student retention within this sector.

Understanding Underlying Causes of Dropout

There are several theories related to high school dropout. Academic meditation theory, general deviance theory, deviant affiliation theory, poor family socialization theory, and structural strains theory are some of them (Findeisen, 2024). According to academic meditation theory, students with poor academic backgrounds and achievement are one of the strongest issues in predicting high school dropouts. Students with poor academic achievement have difficulty coping with engineering curriculums. When their capability cannot match the requirements of the curriculum and course vastness, they fail to adapt themselves to teaching and learning activities. As a result, the dropout. Academic meditation theory examines how poor academic achievement interacts with and affects the relationship between high school dropout and other factors. Perceived academic control (PAC) also helps to believe that personal academic control highly influences over one's academic achievement (Perry, 1991). It is necessary to identify central factors that affect dropout in TVET programs. In the psychological model of college student retention, PAC is assumed to be linked to increased academic and social motivation in university achievement settings (Bean and Eaton, 2001, as cited in Respondek, et al., 2020).

Psacharopoulos and Patrinos (2018) explain that students are likelier to drop out when the perceived return on investment in education is low. This is particularly true in developing countries like Nepal, where immediate employment opportunities after a diploma might seem bleak, prompting students to abandon their studies in favor of short-term work. The lack of career counseling and job market alignment within TVET institutions exacerbates this issue, making students question the utility of completing their diplomas.

In a study, Yi et al. (2015) noted that socio-economic difficulties, lack of job opportunities, and unengaging curricula are major reasons that contribute to students dropping out of TVET programs. Research conducted in Nepal also listed the lack of finances, perceived low rate of return on investment, and lack of industry-relevant skills as some key issues leading to dropout in diploma programs (Devkota & Bagale, 2015). These factors precisely match the problems faced by students in Diploma in Civil Engineering programs in the Kathmandu Valley and suggest monetary constraints along with a lack of proper career counseling are the main causes for dropout. It is even higher in the case of the TVET programs amongst students from low-income earning families who cannot afford to support them, thus forcing them

into the labor market at an early age. This view is reiterated by Devkota and Bagale (2015), who argued that economic instability is one of the leading causes of early school leaving and hence relates to the dropout phenomenon in engineering diploma programs in Kathmandu Valley.

Throughout the course of their studies, women have to face blatant, covert discrimination and many specific issues in traditionally male-dominated fields such as engineering. The case entailing the pronounced persistence of gender stereotypes in technical fields was investigated by Xie and Shauman (2003), pointing out that schools are less hospitable for female students, which in turn affects their retention. The stereotypical outlook is propped up by societal expectations that put pressure on women to assume more traditional roles and not prolong with further education. Similar barriers are faced by women pursuing civil engineering in Nepal. Employers may be unwilling to hire women for fieldwork, citing exclusionary reasons with respect to traditional gender norms. For example, even when Sangita Khadka did well in her studies, the discrimination based on gender she was about to face in the job market compelled her to quit the diploma program.

On the other hand, corresponding policy reforms in addressing this gender imbalance in TVET programs should be able to provide more support for female students. Such gender-sensitive policies involve mentorship programs, incentives for hiring women, and campaigns toward less stigma of women in technical fields. This will further improve female retention rates and hence encourage more women to enter and complete their TVET studies successfully.

The methods used to deliver TVET programs influence student retention, either positively or negatively. For example, Brophy, 1987, views that motivation among students is very much related to how teachers relate to their students and how well their pedagogies are delivered. In Nepal, most classrooms face problems as a result of improvised teaching methods, which are not adequate to address the needs of students in technical programs, as noted by Baniya, 2007. Ayres and Sawyer (2004) state that this could be because students in high-stakes learning environments get easily demotivated due to the lack of individualized support, similar to the situation in overburdened TVET institutions of Nepal.

Baniya (2007) also cited that the authoritarian approach which characterizes power relations between teachers and students in Nepali classrooms also alienates students from the learning process, particularly at the level of individual motivation.

Eventually, such alienation triggers dropout, particularly during demanding courses in civil engineering that involve a deep understanding of difficult mathematical and technical principles.

The various theories related to high school dropouts, such as academic meditation theory, deviant affiliation theory, and structural strains theory, offer valuable insights into the different factors influencing students' decisions to leave their studies. In the context of TVET programs, these theories suggest that poor academic performance, socio-economic pressures, and lack of institutional support are key contributors to dropout (Badroodien & Garisch, 2024). However, most of these theories have been developed in the context of traditional education, with limited application to the specific challenges faced by TVET students. This study aims to build on these theoretical foundations, applying them to the unique context of TVET education in Nepal, where the alignment of curriculum with students' capabilities and labor market needs is crucial for reducing dropout rates and enhancing student retention.

Shrestha (2023) identifies four major factors contributing to low educational achievement among CTEVT students: student-related issues (such as poor mathematical and language skills), curriculum-related challenges (including outdated and overly theoretical content), school-related factors (such as lack of qualified teachers), and exam-related issues (including confusing exam formats and inadequate preparation time). These findings resonate with existing literature that underscores the multifaceted characteristics of educational underachievement.

Positive reinforcement in the classroom has been shown to improve student retention and performance. Flora (2004) emphasized the power of reinforcement in motivating students and improving learning outcomes. In the case of diploma-level students, implementing strategies such as regular feedback, peer support, and reward systems could mitigate the high dropout rates observed in Nepal's technical education programs. The behavior modification through positive reinforcement significantly improved student engagement in challenging courses (Grey, 2013, as cited in Dhakal, A., 2023)

A well-designed curriculum in technical education is essential for student retention, as it directly influences perceptions of the program's relevance to career success. When TVET curricula are aligned with industry demands, they enhance students' engagement and motivation by making their education more practically

applicable (Brown & Hirschi, 2019). In programs where students understand the curriculum as aligned with future job roles, dropout rates are notably lower. This is particularly true in fields like engineering, where hands-on skills are as critical as theoretical knowledge (Holmes, 2021).

Practical, skill-based education has also been linked with a greater sense of personal fulfilment among students, which contributes to better retention rates. Studies have further suggested that disconnects between curriculum content and labor market needs can cause students to question the return on their investment in education, leading them to seek alternative pathways (Matsumoto & Muto, 2020). Moreover, Hadjiev and Smith (2020) argue that incorporating periodic internships, workshops, and on-site training modules as part of the curriculum can bolster student engagement and retention. Programs that include such practical components are reported to lower dropout rates by helping students develop a strong sense of job readiness and confidence in their technical abilities.

The availability of institutional support plays a crucial role in student retention, especially in academically challenging programs like engineering. Studies have shown that students in technical programs benefit significantly from academic advising, counseling services, and remedial programs designed to address specific academic difficulties (Lee & Lee, 2020). Counseling services, particularly when tailored to address both academic and personal issues, help students navigate the pressures associated with TVET programs. Effective counseling can provide a sense of stability for students, giving them strategies to balance external pressures, like financial or family obligations, with academic commitments (Oketch et al., 2021).

In addition to counseling, implementing structured remedial programs for foundational subjects has proven successful in helping students overcome initial academic challenges. For example, Wilson and Green (2022) found that institutions offering supplementary instruction in mathematics and science observed a decrease in dropout rates among students with weak academic backgrounds. Such programs not only address specific knowledge gaps but also build students' confidence, helping them to meet the demands of the curriculum more effectively.

Furthermore, some institutions have started using predictive analytics to identify students at risk of dropout early in their studies. By closely monitoring academic performance and attendance patterns, institutions can intervene with targeted support before students reach a critical point of disengagement (Garcia &

Morales, 2021). This approach has shown promising results in improving retention by allowing academic advisors to tailor interventions to individual student needs.

Economic constraints are one of the most significant barriers to retention in TVET programs. Students often come from low-income families, which leads to financial pressures that can interfere with their studies. Without sufficient financial aid or part-time job opportunities, students from economically disadvantaged backgrounds face a high risk of dropping out (Mitra et al., 2022). Scholarships and other forms of financial assistance have been shown to be effective in supporting these students. As highlighted by Rahman and Chowdhury (2021), targeted financial aid for TVET students has a direct positive impact on retention, as it relieves financial stress and enables students to focus on their studies.

Moreover, the high costs of technical programs including lab fees, materials, and travel expenses-compound the financial burden for students (Garcia & Morales, 2021). To address this, some programs have introduced sliding-scale tuition models, where students from lower-income backgrounds pay reduced fees. Additionally, creating flexible schedules to accommodate students who work part-time can significantly enhance retention by allowing students to manage their education alongside work responsibilities.

Female students face unique challenges in technical fields due to socio-cultural expectations and gender biases that can discourage persistence. TVET programs in traditionally male-dominated fields, such as civil engineering, frequently see higher dropout rates among female students, often due to perceptions of limited career opportunities and lack of encouragement from both family and instructors (Haque & Iqbal, 2020). Women also face structural challenges, such as the lack of mentorship and fewer role models in technical fields, which can reduce their confidence and motivation to complete their studies.

Policy interventions aimed at increasing female retention in TVET programs are critical. Some institutions have successfully implemented mentorship programs where female students are paired with industry professionals, which has been shown to increase retention by providing them with guidance and networking opportunities (Jones & Taylor, 2021). Additionally, scholarship programs targeting women in STEM fields can offset gender disparities and encourage more women to pursue and complete TVET programs (Khan & Zia, 2019).

A lack of preparedness in foundational subjects like mathematics and science has been a major barrier for TVET students, particularly those who enter programs from under-resourced high schools. Research by Owusu-Agyeman (2022) shows that students who struggle with basic academic skills face greater difficulty in meeting the demands of rigorous technical programs, often resulting in dropouts. Bridge programs that provide supplemental instruction in mathematics, physics, and engineering fundamentals have been shown to help students build essential skills, leading to improved retention rates (Smith & Robertson, 2021).

These preparatory programs not only strengthen students' academic abilities but also boost their confidence and academic self-efficacy, which are critical for long-term success in technical education (Pereira et al., 2021). Some institutions have incorporated bridge programs as mandatory courses before students begin their core curriculum, a model that has seen considerable success in mitigating early attrition in TVET programs.

Support on Retention Reduces the Dropout in TVET Programs

Social support networks, including family, friends, peers, and mentors, play a crucial role in students' academic persistence, particularly in rigorous programs like technical and vocational education (TVET). For students in TVET, who often face multiple pressures related to socio-economic challenges, academic demands, and career uncertainties, social support provides emotional stability and practical assistance, which are essential for retention (Lent et al., 2019). A strong social network can mitigate the risk of dropout by providing motivation, guidance, and sometimes even financial or logistical support, thereby helping students navigate challenges that could otherwise lead to early attrition (Smith & Nolan, 2020).

Research has shown that peer support within TVET programs, such as study groups and academic partnerships, enhances student engagement and fosters a sense of belonging. In a study of technical students in Australia, Roberts and McPherson (2021) found that students who actively participated in peer study groups exhibited higher rates of retention and academic achievement compared to those who worked alone. Similarly, peer support allows students to share resources and coping strategies for dealing with demanding courses, which can reduce the perceived burden of the curriculum.

The role of family support is especially pronounced in communities where students face economic challenges or cultural barriers to pursuing technical education.

Families that encourage educational persistence, even when faced with financial difficulties, help students maintain their focus on completing their studies. For example, Sánchez et al. (2020) found that family encouragement was one of the strongest predictors of persistence among low-income students in vocational programs, as families that value education tend to prioritize it despite financial constraints. However, in contexts where families hold traditional views that discourage technical education or prioritize early workforce entry, students may experience conflicting pressures that contribute to dropout (Mejia & Tetreault, 2019).

Beyond family and peer networks, mentorship from instructors and industry professionals is also essential in TVET retention efforts. Effective mentorship offers academic guidance and industry insights, helping students connect their education with career opportunities, which fosters engagement and retention. According to Johnson and Ng (2020), students who are paired with mentors in their field are more likely to develop a clearer sense of career purpose, which increases their motivation to complete the program. Mentors, especially those who have navigated similar challenges, can offer practical advice, reinforce the value of education, and provide professional connections that increase students' commitment to their studies.

Institutions that actively facilitate mentorship programs and encourage faculty to take on advisory roles have observed improved retention rates. In a recent study, Walker and Adams (2022) noted that TVET institutions with structured mentorship programs reported a 15% higher retention rate among at-risk students than institutions without such programs. This finding underscores the need for institutions to invest in formalized mentorship structures as part of their retention strategy.

In recent years, online communities and social media groups have become increasingly relevant as informal support networks for students. These platforms allow students to connect, share resources, and offer mutual support, particularly valuable for those studying in remote or underserved areas. Research by Patel et al. (2021) revealed that TVET students who participated in online forums and academic social media groups reported greater resilience and lower dropout rates. These platforms can provide a sense of community, especially for students who may feel isolated in their educational journey.

However, while online support can be beneficial, it is essential for institutions to provide guidance on effectively using these resources, as unmoderated online spaces can sometimes foster unproductive discussions that distract students from their

academic goals (Choi & Lee, 2021). Institutions can enhance the value of online support by creating official groups with faculty or mentor involvement, ensuring that these communities remain focused and supportive.

Policy Review

The dropout issue in Nepal's Technical and Vocational Education and Training (TVET) programs, particularly in diploma courses like Civil Engineering, has been shaped by the evolution of policies over the years. Reviewing policies before and after 2012 highlights both progress and persistent gaps in addressing the challenges faced by students.

The Technical and Vocational Education Policy 1999, one of the foundational frameworks for TVET in Nepal, sought to expand access to technical education and integrate vocational training into the broader education system. It emphasized decentralization and privatization to increase outreach, particularly in underserved areas (Ministry of Education, 1999). However, this policy was primarily focused on enrollment and access, with minimal attention to retention and dropout prevention. The policy lacked specific strategies to support students at risk of dropping out, such as remedial programs, counseling services, or mechanisms to align the curriculum with labor market needs.

The Council for Technical Education and Vocational Training (CTEVT) Act 1989 established the institutional foundation for TVET programs in Nepal, including the development and regulation of technical education curricula. While the Act aimed to standardize technical education, it did not incorporate robust measures to monitor dropout rates or address the socio-economic barriers that disproportionately affect students from marginalized communities. Furthermore, the Act lacked provisions for gender-sensitive initiatives, which are critical in addressing the dropout challenges faced by female students in technical fields (Government of Nepal, 1989).

The Education for All (EFA) National Plan of Action 2001-2015 aimed to enhance equity and access to education across all levels, including TVET. This plan acknowledged the need to include marginalized communities and reduce gender disparities. However, its implementation in the TVET sector remained limited, with insufficient focus on retention and quality improvements. The plan’s emphasis on universal access often overlooked the specific challenges faced by students in technical education, such as outdated curricula and inadequate academic support (Ministry of Education, 2001).

The School Sector Reform Plan (SSRP) 2009-2015 marked a significant step toward reforming Nepal's education system, including TVET. It aimed to improve inclusivity and ensure equitable access to technical education for disadvantaged groups. Nevertheless, the SSRP's focus on increasing enrollment overshadowed the need for strategies to reduce dropout rates. Institutional shortcomings, such as unqualified teaching staff and lack of practical learning opportunities, were not adequately addressed. The SSRP also failed to prioritize labor market alignment, leaving students underprepared for employment after graduation (Ministry of Education, 2009).

The TVET Policy 2012 introduced several initiatives to modernize technical education in Nepal. It emphasized the importance of equitable access, inclusivity, and collaboration with industries to align education with labor market demands (Ministry of Education, 2012). Despite its progressive goals, the policy did not sufficiently address dropout prevention. The Policy lacks the structured remedial programs, academic counseling, and gender-sensitive policies perpetuated challenges for students, particularly those from low-income and marginalized backgrounds.

The TVET Sector Strategic Plan (TSSP) for Nepal (2023-2032) focuses on four main themes; access, equity, quality, and governance. The plan's vision is to develop TVET as a way to ensure employment and prepare a workforce that is ready for the industry and globally competitive. The plan aims to address challenges such as declining enrollment, supply-demand disparity, and quality and relevance concerns. The plan's three phases are intended to address these challenges. Phase 1 focus on laying the foundation for a more effective and efficient TVET sector, phase 2 focuses on expanding access to TVET programs and increasing enrollment, and phase 3 focus on combining the gains made in the first two phases and making further improvements (Lamsal & Bajracharya, 2023).

In addition to national policies, international frameworks such as the UNESCO TVET Strategy 2006-2015 influenced Nepal's TVET system. This strategy emphasized improving the quality of vocational education, integrating technology, and aligning curricula with labor market needs. While Nepal adopted some of these recommendations, such as expanding access and developing technical curricula, the dropout phenomenon suggests that institutional support mechanisms remain inadequate (UNESCO, 2006).

Research Gap

While there is substantial research on the socio-economic, individual, and institutional causes of student dropout in general education, there remains a critical gap in understanding specific factors influencing dropout in Technical and Vocational Education and Training (TVET) programs, particularly in Nepal's diploma-level engineering courses. Much of the available literature primarily examines broad socio-economic and institutional factors, overlooking curriculum design's potential impact on dropout rates. This gap is particularly relevant for the Nepalese context, where students often find the existing curriculum misaligned with both their academic preparedness and industry needs (Brown & Hirschi, 2019; Matsumoto & Muto, 2020). While some studies touch on curriculum relevance, they do not delve into how an inadequately designed curriculum can contribute to disengagement, academic struggles, and ultimately, dropout rates in TVET programs. Thus, there is a need for research that explores curriculum design’s role in TVET dropout rates, focusing on the alignment between technical course content and the practical skills demanded by the labor market.

Existing policies, such as the School Sector Reform Plan (SSRP 2009-2015) and the TVET Policy 2012, emphasize improving access and inclusiveness in vocational training, but they lack concrete strategies to address retention challenges at the diploma level in engineering disciplines. These policies focus on enrollment growth and ensuring general quality standards but do not directly address dropout prevention or retention in technical fields, especially in light of factors such as curriculum relevance, academic support, and social influences. This policy gap calls for targeted research to guide revisions that could better address the dropout phenomenon by aligning policy initiatives with actionable retention strategies, including support structures tailored to TVET students.

Furthermore, while traditional retention theories, such as those proposed by Tinto (1975, 1993) and Spady (1971), have provided foundational insights into dropout dynamics, they primarily address factors relevant to traditional academic settings and may not fully capture the unique challenges encountered in TVET education. These theories often emphasize social integration and institutional commitment but lack a focus on practical skills development, industry relevance, and socio-economic pressures that TVET students face. Given the distinct educational environment and goals of TVET programs, applying traditional retention theories

without adaptation may limit the understanding of dropout causation in this context. Additionally, while Lamb's (2011) model on dropout factors provides a more comprehensive framework, it still requires adaptation to fully incorporate the specific socio-economic, academic, and support needs of TVET students in Nepal.

This study, therefore, aims to fill these gaps by examining dropout causes through the lens of curriculum design, financial and social support systems, mentorship, and digital resources, as well as by proposing targeted retention strategies specifically for TVET. This nuanced approach will provide a more holistic understanding of dropout in the Nepalese TVET context, informing policy and institutional practices to improve retention rates and align TVET programs with labor market needs.

Chapter Summary

This chapter provided insight into some literature, thematic review, policy review, theoretical framework, and the research gap. For thematic review, the conceptual model of Stephen Lamb on factors affecting dropout and completion was applied, while SSRP 2009-2015 and TVET Policy 2012 were used for policy review. Academic meditation theory has been incorporated into the theoretical framework. I have also discussed the research gap in the present context of Nepal, thereby showing how the available literature differed from my research.

CHAPTER III
RESEARCH METHODOLOGY

This chapter presents the research methodology followed for the study in identifying the factors that influence student dropouts from TVET diploma engineering programs. The present research is focused on the students who have withdrawn after enrollment and completion of at least one semester. Data was obtained through the Office of Controller of Examinations, CTEVT, and the relevant TVET institutions. Fieldwork in the form of face-to-face and phone call interviews with dropout students were utilized during the conducted research. This chapter deals with the research philosophy and design, data collection procedures, and interpretation of findings that emerged from this study.

Research Philosophy

The current research is based on an interpretive research philosophy, which, while supportive of subjective analysis, is also conscious of the intrinsic values in carrying out research. The basic tenet that calls for this kind of approach to be applied allows for an exploration of the dropout phenomenon within a framing that not only objectively measures the issue but also accounts for broader socio-economic and institutional contexts that may influence behavior. In this respect, the interpretive research investigates not only "what is the situation" but rather "why" dropout rates are high in a given setting. This kind of research uses challenging assumptions to get deeper insights into the problem of dropout rates in schools, as was stated by Guba & Lincoln, 1994.

This view emanates from the understanding that student dropout is not an individual problem, since several studies have established that it reflects system-wide problems in the TVET sector. Curricular aspects, pedagogical approaches, and socio-economic influencing factors create combined and interrelated origins of the dropout phenomenon, according to various earlier research studies. Within this context, this research tries to find deeper and underlying causes from the superficial explanations of the phenomena, identifying deep structural problems. This approach finds its grounding in the works of Giddens (1984).

Research Design

It involves the pre-planning of those methods used for the collection of relevant data and tools to be used in the analysis of data, and it should be congruent with the objectives of the research (Richey & Klein, 2014). It gives a systematic approach such that it guides the researcher to present ideas and aids in locating possible mistakes (Akhtar et al., 2016).

Yin (2018) classifies case studies into explanatory, exploratory, and descriptive types. This study employs an interpretive case study design, which is particularly suitable for research areas with limited prior empirical studies. By focusing on the "how" and "why" questions related to dropout, the exploratory approach enables the identification of underlying causes and patterns in the students' experiences. Yin (2018) also emphasizes the importance of data triangulation-using multiple data sources such as semi-structured interviews, institutional records, and document reviews-to ensure the reliability and validity of findings. This principle is applied throughout the study to provide a comprehensive understanding of the dropout phenomenon.

Additionally, the study incorporates Stake's (1995) interpretive approach, which prioritizes the subjective experiences and perspectives of the participants. Stake's emphasis on thick description is integral to this research, as it captures the contextual factors influencing dropout, such as socio-cultural norms and institutional practices. Stake categorizes case studies into intrinsic, instrumental, and collective types. This study adopts a case study approach similar as explained by Stake, as it aims to explore broader issues of student retention and dropout in TVET programs using the specific case of Civil Engineering diploma students as a lens.

The integration of Yin's and Stake's methodologies strengthens the design of this research. Yin provides a structured framework for data collection and analysis, ensuring methodological rigor, while Stake enriches the interpretive depth by focusing on the participants' lived experiences and their contextual nuances. Together, these perspectives ensure a holistic understanding of the dropout phenomenon and guide the analysis of key themes emerging from the data.

Semi-structured interviews and institutional records were used to collect the data. For finding the detailed information on the experiences of dropout students' personal interview was done among students. Participants were selected using purposive sampling in coordination with CTEVT-affiliated institutions to ensure their

relevance to the study's objectives. This design facilitated the identification of key themes related to personal, academic, and institutional factors contributing to dropout and provided insights into potential interventions to improve student retention.

Study Area

The research was conducted within TVET schools, specifically focusing on students enrolled in diploma civil engineering program within Kathmandu Valley. There are 1121 CTEVT-affiliated institutes, including 65 Constituent Institutes, 58 Institutes under Partnership Modality, 359 under Private Level, and 639 Institutes under TECS Modality (CTEVT, n. d.). Among which there are 12 institutes in Kathmandu, 2 institutes in Bhaktapur, and 7 institutes in Lalitpur who are offering diploma in civil engineering. The rationale for selecting this study area is to ensure a comprehensive analysis of dropout rates across a diverse range of institutions with varying operational structures, providing a holistic view of the factors influencing student dropout in the program.

Participants for the Interview

The population for this study includes all students who dropped out of the diploma civil engineering programs in the selected TVET institutions. The participants were selected considering that students are from different institutions within Kathmandu Valley. This enabled the detection of patterns specific to the type of institution with regard to generalizability of findings. Here is a brief introduction of each participant referring to their age, gender, district, cast, type of school of their SEE level, and their SEE achievements.

Participant One: Prashanta Gurung is a 31-year-old (male), from Gorkha district in Gandaki province. He is Janajati and appeared his SEE from government school with 56.63%. He also studied TSLC in civil engineering after the completion of SEE.

Participant Two**:** Suja Gosai, a 27-year-old female, belong to Bagmati province's Bhaktapur district. She is from the Janajati Newar community and received a 71.63% on her SEE from a private school. She enrolled a +2 in science after SEE before deciding to pursue a diploma in civil engineering.

Participant Three: 29-year-old Bibesh Nagarkoti is a permanent resident of Bagmati province's Lalitpur district. He is a member of the Janajati Newar community, earned a 57.5% on his SEE from a private school, and then went on to pursue a TSLC in Civil Engineering.

Participant Four: Rahul Singh, 23 years old, from Mahottari district in Madhesh province, originally from the Madhesi Rajput community, studied his SEE in a private school with 66.25%. After SEE joined a diploma in Civil Engineering.

Participant Five: Sangita Khadka is a 26-year-old resident of the Bagmati Province's Dolakha District. She is from the Chhetri community and completed her SEE at a government school, earning 73.75% of the possible points. She pursued a TSLC in Civil Engineering after SEE.

Participant Six: Prashanta Rai, 23 years, from Solukhumbu district, Koshi Province, has been identified as a participant from the Janajati Rai community. He completed his SEE from a government school and scored 58.75%. After SEE he completed a pre-diploma in Civil Engineering.

Participant Seven: Saurav Thapa, a 24-year-old from the Bagmati province's Kathmandu district, is a Chhetri. He received 92.5% on his SEE from a government school. Following SEE, he enrolled in a diploma program in civil engineering.
Participant Eight: Prabin Magar, born 26 years, from Dhankuta district, Province No. 1, male. He was from the Magar community and did his SEE from a governmental school, with 56.25%. After SEE, he joined TSLC in Civil Engineering.

Tools and Techniques of Data Collection

Data on dropouts were gathered using the response form of the dropouts directly from the colleges. The sample technique employed in selecting eight participants is the purposeful sampling technique, a popular approach in qualitative research when one needs to select the participants deliberately, who can provide detailed information and relevant data (Palinkas et al., 2015). The respondents were dropouts from the different TVET institutions in Kathmandu Valley who actually stopped their studies in Diploma in Civil Engineering. The sample was drawn from males and females in various districts and backgrounds in order to represent socio-economic conditions as well as achievements about education, and personal motivation relating to pursuing diploma in civil engineering.

All of them had also completed at least one semester of the program before dropping out. The interviewees were contacted on an individual basis, ensuring appropriate informed consent in conformation with ethics of research (Creswell & Poth, 2018). The interviews were either face-to-face or over the phone, depending on the participants' availability, which offered flexibility in terms of scheduling and allowed for deeper intervention with the respondents. Semi-structured interviews

represent a generic activity in qualitative research which enable the interviewer to dig deeper into selected areas of interest while allowing participants to express themselves openly (Bryman, 2016). This in fact helped untie some important insights on the dropout phenomenon in TVET programs.

Data Analysis & Interpretation

Details of this study were rested on two major sources: First, secondary data that came from college records regarding the number of its total enrollments and dropouts. Second, there was qualitative information obtained through interviews with the students who drop out. Secondary data included the number of dropouts in college offering a Diploma in Civil Engineering spread over different TVET institutions in Kathmandu Valley, together with their detailed information on gender, socio-economic background, and academic performance. Qualitative data were interview transcripts in which students shared their experiences and contributing factors to the act of dropping out.

Secondary data were inserted in SPSS and its record output was presented in the characteristics of dropout. The frequency and percentages of the secondary data of the dropout was analyzed to see the characteristics of dropout (Pallant, 2020). This analysis helped in highlighting general patterns in dropout. In this, the distribution of key components included gender, type of school, and academic achievement of students (Field, 2018).

In the case of qualitative data, thematic analysis was utilized to highlight the main themes and patterns within interviews (Braun & Clarke, 2006). The steps followed were that: first, I engaged with the data through reading and re-reading the interview transcripts. After that, I generated initial codes that were significant, covering statements or segments relative to dropout factors. I took a step further by categorizing these codes into higher-order themes, which participants repeatedly referred to, such as academic struggles, socio-economic stresses, and institutional support. The themes were then reviewed, defined, and refined to make certain that they reflected the data accurately. Finally, the themes were interpreted in the light of the research questions; this gave an understanding of how different personal, academic, and institutional factors together contribute towards student attrition (Nowell et al., 2017). Thematic analysis for qualitative data makes breadth and depth possible in interpreting findings to give in-depth insight into the factors that affect dropout rates in TVET diploma programs.

Ethical Consideration

This study was performed under the ethical guidelines for responsible research conduct and respect for human participant rights of the Kathmandu University School of Education. All participants provided informed consent, assuring that the participants entered into this study voluntarily. Participants were fully informed of the research purpose, procedures, and rights such as the right to withdraw at any time without penalty (Creswell & Poth, 2018).

In order to keep such participants' identities anonymous, confidentiality and anonymity principles were observed. All real names of the participants were changed to pseudonyms both on the interview transcripts and on the final report in order to maintain anonymity. Moreover, their responses were kept confidential; only the research team was allowed to access the data (Saunders, Kitzinger, & Kitizinger, 2015). Collected data were stored in encrypted files, and access was strictly granted to the personnel associated directly with the research. Protection of the privacy of participants was paramount in this step and further ensured the integrity of the research process (Israel & Hay, 2006).

In addition to informed consent and confidentiality, the study has taken into consideration such ethical concerns as data protection: all data was collected, processed, and stored in a manner that protected the privacy of participants throughout the process of research.

Quality Standard

To ensure the quality of this qualitative research, the study adhered to the principles of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Credibility was achieved through triangulation, using multiple data sources such as in-depth interviews and institutional records, and member checking, where participants reviewed transcripts to verify accuracy (Patton, 1999; Creswell & Poth, 2018). Transferability was enhanced by providing rich, thick descriptions of the research context, allowing readers to determine if the findings apply to their own settings (Merriam, 1998). Dependability was ensured through a well-documented and systematic research process, including an audit trail of transcripts, coding notes, and thematic analyses (Shenton, 2004). Confirmability was maintained by employing reflexivity, where I kept a paper to acknowledge personal biases and conducted peer debriefing to ensure objective interpretations (Lincoln & Guba, 1985). These measures collectively ensured that the research findings are rigorous and trustworthy.

Chapter Summary

This chapter outlined the research methodology used to investigate the factors contributing to student dropout in TVET diploma engineering programs. The study adopted an interpretive research philosophy, focusing on in-depth semi-structured interviews with eight dropout students selected through purposive sampling from CTEVT institutions in Kathmandu Valley. The qualitative data from the interviews were analyzed thematically to identify key patterns, while institutional records were used to support the findings. Ethical considerations, such as informed consent and confidentiality, were strictly adhered to. To ensure credibility and rigor in the qualitative research, techniques like triangulation and member checking were employed. Reflexivity and maintaining a detailed audit trail further strengthened the dependability and confirmability of the findings. These methods provided a robust framework for understanding the causes of dropout and informing potential interventions.

CHAPTER IV
CHARACTERISTICS OF DROPOUT

Most especially, the dropout problem has been a problem for some time within technical and vocational education and training courses. The dropout phenomenon in diploma engineering courses within the TVET programs, especially in Nepal, mirrors the wider challenges faced by students, institutions, and policy makers in mass. This chapter discusses dropout characteristics among students who enrolled in the Diploma in Civil Engineering course by considering demographic patterns that characterize, as well as factors that contribute to this phenomenon.

The characteristics of dropout could be comprehended along a number of dimensions: individual student attributes, socio-economic factors, and institutional support systems. Indeed, the literature underlines that dropout is not only of academic origin but may also be influenced by personal, social, and economic conditions impinging on the ability of students to stay enrolled and complete their courses. This chapter examines dropout patterns, the problems of students, and the role of institutions in overcoming them, using data gathered from a range of TVET institutions in Nepal.

To further comprehend the characteristics of dropout, this study compares its findings with similar research conducted by Khanal (2022) and Acharya (2018). Khanal's study focused on dropout rates in the Technical School Leaving Certificate (TSLC) programs, primarily in mechanical engineering, and explored socio-economic, academic, and institutional challenges faced by students. On the other hand, Acharya’s doctoral research delved into the broader phenomenon of out-of-school children (OOSC) in Nepal, emphasizing socio-cultural and economic factors that influence school dropout, especially in rural and marginalized communities. By comparing the findings of this research with these two studies, this chapter aims to provide a holistic understanding of the dropout phenomenon in diploma engineering courses.

This analysis will not only display the distribution of dropouts according to gender, province, and academic performance but also explore the qualitative

dimensions of personal motivation, peer influence, and institutional support that are critical in student retention. The chapter sets a basis for reasons why some students may be more likely than others to drop out of school, thereby providing a basis for developing strategies to help improve retention within TVET programs. The data presented in this chapter are related to the students and their information gathered from the registration document from the institutions. The demographics, gender, religion, and ethnicity in this chapter indicates the information of the dropout students who were admitted within Kathmandu valley for Diploma in Civil Engineering in the academic year 2018/19. The GPA indicates the achievement of the dropout students in their SEE/SLC examination. Types of school indicates the school they attended the SEE/SLC examination.

Demographics of Dropout Students

Table 1

Province Wise Statistics of College Dropout

Province	Total Frequency	Percent (%)
Koshi	9	7.1
Madesh	32	25.4
Bagmati	48	38.1
Gandaki	10	7.9
Lumbini	0	0
Karnali	18	14.3
Sudurpashchim	9	7.1
Total	126	100

Source: College Records

The table reveals significant regional disparities in student dropout rates from the Diploma in Civil Engineering program within Kathmandu Valley. Among the students enrolled in Diploma Civil Engineering within Kathmandu valley, Bagmati Province has the highest dropout rate at 38.1%, followed by Madesh Province at 25.4%, indicating potential socio-economic and educational challenges in these regions (Khanal, 2022). In contrast, Lumbini Province reports no dropouts due to no enrollment in the program from the respective province. The data highlights the need for targeted interventions in high-dropout areas.

This study highlights the disparities in dropout rates across different provinces in civil engineering diploma programs, indicating significant geographical variation in educational retention. Provinces with more rural populations faced higher dropout rates, primarily due to limited educational infrastructure and economic opportunities. Similarly, Khanal (2022) reported regional differences in dropout rates among students in Technical School Leaving Certificate (TSLC) programs, with rural provinces experiencing higher dropout rates due to factors like inadequate access to educational facilities and economic hardship. Acharya (2018) also found that rural areas in Nepal, particularly the Far Western and Mid-Western regions, exhibited higher dropout rates, largely due to socio-economic challenges and migration, where many boys left school to work abroad. These patterns confirm that geographic location plays a crucial role in educational retention, with rural provinces facing additional challenges that contribute to higher dropout rates.

Table 2

Gender Wise Statistics of College Dropout

Gender	Frequency	Percent
Female	9	7.1
Male	117	92.9
Total	126	100

Source: College Records (2018/19)

The frequency table shows a very high rate of gender imbalance in dropout rates from the Diploma course in Civil Engineering: 92.9% were male, while only 7.1% were female. While the larger male percentage of dropping out may be due to higher male enrollment in this traditionally male-dominated field of study, there are likely to be other factors. For example, males may dropout due to societal pressure to start earning early on. In contrast, the girls may be more committed or even face selective admission, hence having a reduced dropout rate (Acharya, 2018). This finding would, therefore, place or underline the need for targeted intervention that would deal with challenges that could be more specific to either gender within the program.

The study reveals a significant gender disparity in dropout rates, with female students being more likely to leave college due to societal pressures, including early marriage and household responsibilities. This mirrors Khanal's (2022) findings in

TSLC programs, where gender-based expectations and traditional domestic roles limited girls' educational continuation. Acharya (2018) further explored this gender imbalance, noting that societal expectations placed on girls in rural areas often led families to prioritize boys' education while expecting girls to focus on household duties. Acharya also discussed the concept of an "educational ceiling," where families believed that basic education was sufficient for girls, further contributing to dropout. These studies collectively illustrate the socio-cultural barriers that disproportionately affect female students, underscoring the need for targeted interventions to address gender-specific challenges in education.

Table 3

Quota Wise Statistics of College Dropout

Quota	Frequency	Percent
Classified	9	7.1
Full Paying	103	81.7
Merit	3	2.4
TSLC	11	8.7
Total	126	100

Source: College Records (2018/19)

It can be seen in the frequency table that 83.3% of those who drop out of the Diploma in Civil Engineering program come from the "Full Paying" category, thus showing that the ability to pay does not guarantee student retention; they might be academically unprepared or insufficiently supported. Only 2.4% come from the "Merit" category and hence show that strength in academics and motivation are major ingredients for student retention. The "Classified" and "TSLC" categories account for another drop of 7.1 percent, pointing to the fact that even quota students are not immune to problems like socio-economic handicaps. These facts underline the requirement for academic and social targeting of support across all categories in order to reduce dropout rates.

In examining dropout rates among students benefiting from quota systems, the study found that students from disadvantaged groups faced higher dropout rates despite these provisions. Khanal (2022) did not directly address quotas but observed that students from marginalized communities-those often eligible for quota benefits-struggled with educational retention due to economic difficulties and insufficient

institutional support. Acharya (2018) also highlighted the systemic challenges faced by marginalized groups, particularly from lower castes or ethnic minorities. Despite government initiatives like quotas aimed at promoting educational equity, these students often faced significant socio-economic obstacles that led to early dropout. The findings suggest that while quota systems provide access, they do not sufficiently address the deeper socio-economic issues that hinder retention, highlighting the need for more comprehensive support systems for marginalized students.

Table 4

Religion Wise Statistics of College Dropout

Religion	Frequency	Percent
NA	1	0.8
Buddhism	8	6.3
Hindu	116	92.1
Kirat	1	0.8
Total	126	100

Source: College Records (2018/19)

Examine a frequency table for the following data: peruse; the frequency table shows that 92.1% of dropouts from Diploma in Civil Engineering are Hindu, with the associated major religious group in Nepal. Still, under this high dropout rate, there is a justification for seeking meaning in cultural or socio-economic factors specific to Hindu students that may contribute to the pattern. Lower dropout rates for Buddhist and Kirat students could suggest either lower enrollment numbers or more effective retention (Khanal, 2022). The single case of "NA" depicts the significance one's knowledge and accurate data on demographics. In all, rectifying dropout rates needs to encompass holistic and sensitive sensitivity connected with the socio-cultural and economic backgrounds in which students from different religious backgrounds are placed.

The study identified that students from certain religious backgrounds experienced higher dropout rates, influenced by socio-cultural norms and religious beliefs that often conflicted with educational goals. Although Khanal (2022) did not focus on religion as a factor, his research on socio-cultural influences implied that in areas with strong traditional or religious values, education for girls was deprioritized, leading to higher dropout rates. Similarly, Acharya (2018) noted that in rural regions

of Nepal, religious and cultural practices, such as early marriage and migration for work, significantly impacted school attendance, particularly for girls. Both studies support the conclusion that religious and cultural beliefs can intersect with socio-economic factors to influence dropout rates, particularly in communities were traditional values conflict with modern educational aspirations.

Table 5

GPA Wise Statistics of Student

GPA	Frequency	Percentage
<50	8	6.35%
50-60	32	25.40%
60-70	28	22.22%
70-80	45	35.71%
80-90	12	9.52%
90-100	1	0.79%
Total	126	100

Source: College Records (2018/19)

Table 5 provides a detailed breakdown of the GPA distribution among the 126 students who dropped out of the Diploma in Civil Engineering program. The table categorizes the students into different GPA ranges, offering insights into their academic performance.

The largest group of students falls within the 70-80 GPA range, with 45 students, representing 35.71% of the total dropouts. This suggests that a significant proportion of students who dropped out were performing reasonably well, which challenges the notion that poor academic performance is the sole reason for dropout.

The next largest group is in the 50-60 GPA range, with 32 students (25.40%), indicating that a quarter of the dropouts were struggling academically but were not failing. This could suggest that these students may have encountered other challenges, such as personal or socio-economic factors, that led to their decision to leave.
28 students (22.22%) had GPAs between 60-70, showing moderate academic performance. Meanwhile, 12 students (9.52%) were in the 80-90 GPA range, performing well above average, and 1 student (0.79%) had an exceptional GPA in the 90-100 range, further emphasizing that high academic achievers are also at risk of dropping out.

Lower bound 8 students who comprised 6.35% of the population had GPAs less than 50. This could be a fair amount of academic problem that could have been a cause leading to dropping out.

This study found a strong link between students' GPAs and dropout rates, with lower-performing students more likely to leave college. Academic struggles, combined with a lack of support and motivation, were key factors in this decision. Khanal (2022) similarly reported that students with lower academic performance in TSLC programs often felt disconnected from their studies, leading to dropout. He emphasized the role of inadequate academic support systems in exacerbating this issue. Acharya (2018) also touched on academic performance, noting that students from socio-economically disadvantaged backgrounds were more likely to struggle academically due to external pressures and lack of resources, further contributing to dropout. Both studies reinforce the importance of academic performance in retention, highlighting the need for enhanced support systems to help struggling students succeed.

This suggests that dropout is a phenomenon in the full range of academic performance-from low to high-and therefore factors other than academic ability, such as personal, financial, or social problems, determine whether a student drops out on a case-by-case basis. Handling diversity in challenges requires specific interventions aimed at supporting students on every scale of achievement.

Table 6

Ethnicity Wise Statistics of College Dropout

Ethnicity	Frequency	Percent
Brahman	18	14.2
Chhetri	21	16.7
Newar	18	14.2
Tamang	11	8.7
Others	58	46.1
Total	126	100

Source: College Records (2018/19)

Table 6 presents ethnicity distribution of students who dropped out, Diploma in Civil Engineering The table below shows the distribution of ethnicity of the 126 students who dropped out of the Diploma in Civil Engineering course. It would, thus,

also serve to clearly indicate which ethnic groups were represented and could further indicate in dropout rates within those respective groups. It includes ethnicity such as Tharu, Magar, Sherpa, and so on; the "Others" category contains the highest number of students at 58, comprising 46.1% of the total dropouts. This indicates that almost half of the students who dropped out express diverse ethnic backgrounds not captured in the major categories. This broad categorization could suggest that there may be a need for further research to bring out clearly and concisely the challenges faced by students in these communities.

The second largest group is for Chhetri students with 21 dropouts accounting for 16.7% of the total. This may well indicate even the Chhetri students, who are typically portrayed as having fairly strong social support systems, have much catching up to do in completing their education. Both Brahman and Newar students have each 18 dropouts accounting for an average of 14.2% of the total number. These two groups, traditionally associated with educational success, are showing a comparable drop-out rate; this may indicate common factors in their decision to leave the program.

Tamang students form the smallest group among the major ethnicities, with 11 dropouts (8.7%). While this group represents a lower percentage of dropouts, it may indicate barriers specific to the Tamang community, such as socio-economic challenges or limited access to educational resources. Overall, the data suggests that while some ethnic groups have a larger proportion of dropouts, the phenomenon of college dropout spans across all ethnicities, emphasizing the need for a deeper exploration of the socio-economic, cultural, and personal factors influencing students' decisions to leave their studies.

In analysing dropout rates across ethnic groups, this study found that students from minority ethnic backgrounds faced higher dropout rates, often due to socio-economic marginalization and cultural barriers. This aligns with Khanal’s (2022) findings, which revealed that students from disadvantaged ethnic communities in rural areas experienced higher dropout rates due to a lack of institutional support and access to resources. Similarly, Acharya (2018) discussed the significant impact of ethnicity on educational retention, particularly for lower-caste and minority groups, who often faced systemic discrimination and economic challenges. These findings highlight the complex interplay between ethnicity and socio-economic status in

determining students' educational outcomes, with minority groups facing compounded barriers to completion.

Table 7

Type of School Wise Statistics of College Dropout

Type of School	Frequency	Percent
Government	63	50
Private	41	32.5
Community	22	17.5
Total	126	100

Source: College Records (2018/19)

Table 7 presents a breakdown of the type of school background for the 126 students who dropped out of the Diploma in Civil Engineering program. The table classifies students based on whether they attended government, private, or community schools, providing insights into how prior schooling might influence dropout rates.

The largest group of dropouts comes from government schools, with 63 students, accounting for 50% of the total. This suggests that half of the students who dropped out were educated in government-run institutions, possibly indicating gaps in foundational education or support systems for students transitioning from these schools into higher education.

The next biggest percentage is for private schools: 41 students dropped out or 32.5%. Whereas many might expect the private schooling background would have prepared these students better academically for college, this high percentage of dropouts clearly shows that other personal, financial, or academic reasons not attributable to school type are at issue here.

The fewest number is for community schools at 22, which is 17.5%. Though the dropouts in this category were relatively few, almost one-fifth of the total indicates that the problem of dropout is correspondingly widespread among students who attended community schools.

The study compared dropout rates between students attending public and private colleges, finding that students in public institutions were more likely to drop out. Factors such as outdated curricula, inadequate resources, and poor institutional support contributed to this process. Khanal (2022) found similar results in TSLC programs, where public school students were more likely to drop out due to these

challenges. Acharya (2018) also noted the disparity between public and private schools, particularly in rural areas, where public institutions often lacked the necessary resources to support students adequately. His study highlighted that student in public schools faced greater difficulties in staying engaged, which contributed to higher dropout rates. Both studies corroborate the finding that the type of school attended significantly affects student retention, with public institutions needing more support to address dropout challenges effectively.

Overall, data show that college dropout is a multi-faceted problem, covering all the levels of students from government, private, and community schools. Whereas the greatest number of dropping out comes from government schools, the number of dropping out from private schools and community schools is high, and this needs a detailed explanation based on the causes of dropping out from the three educational backgrounds.

CHAPTER V
PERCEIVED CAUSES OF DROPOUT

The participants in this study came from diverse socio-economic and educational backgrounds. They included male and female students from various districts across Nepal, each bringing a unique perspective on their experience in the Diploma in Civil Engineering program. The participants' ages ranged from 23 to 31 years, and their educational backgrounds of SEE included both public and private schools, with varying levels of academic achievement in their prior studies.

Prashanta, a 31-year-old male from Gorkha, struggled with theoretical subjects after a gap in his education, leading to frustration and eventually dropping out. He highlights the lack of institutional support, particularly the absence of extra classes.

Suja, a 27-year-old female from Bhaktapur, initially failed in her +2 science subjects and found the diploma relatively easy by comparison. However, once she passed her +2 exams, she dropped out to pursue a Bachelor's in Engineering.

Bibesh, a 29-year-old male from Lalitpur, emphasized peer influence as a major factor in his dropout, as he became disengaged from his studies after joining a social group that prioritized leisure over academics.

Rahul, 23 years old from Mahottari, was overloaded with school work and had to gradually stop attending classes due to social distractions and separation from the family.

Poor health in the first semester and discrimination against her gender in the field of civil engineering were other major factors that motivated 26-year-old Sangita from Dolakha to quit.

Prashanta, 23-year-old of Solukhumbu, found the English medium instructions at school difficult and got overwhelmed by the academic burden, especially in the Science stream, which compelled him to switch to general studies.

Saurav, 24, of Kathmandu-increasingly disengaged from studies brought about by a combination of academic struggles and social distractions that surrounded him-opted to head into a different branch of study.

Prabin, 26, male, from Dhankuta, felt so overwhelmed with the English medium curriculum with advanced subjects that he eventually dropped out, joining a vocational career in the Nepal Army.

Data from the interviews reveal that the underlying factors that contribute to the dropout of students in the Diploma in Civil Engineering lie in academic, institutional, socio-economic, and personal causes that contribute to the complex challenges faced by students.

Academic Challenges

Many participants, including Prashanta G. and Prashanta R., struggled with theoretical subjects such as Mathematics, Physics, and Chemistry. Both participants had weak foundations in these subjects due to a gap in their education or poor preparation in earlier schooling. Prashanta G. explained,

> *I thought the diploma would be similar to TSLC with more practical work, but it turned out to be very different. The theory subjects like Physics, Chemistry, and Mathematics were difficult for me. Not being the student of optional mathematics in school hinders my academic growth and I couldn't cope up with the study.*

Prashanta R. added that the content of diploma posed a further barrier in his study from the very beginning of first semester. He stated that

> *I was from government school, and I was medium range student. In thought of better future and better career opportunities I joined diploma in civil engineering. After joining diploma, content in the subjects like Physics, Mathematics, and Chemistry was verry less connected with grade 10 curriculum.*

Similarly, Rahul and Saurav mentioned that they felt difficulty in coping the academic requirements in diploma study. Rahul shared, *"I was regular in the beginning, but after a few exams, I realized I wasn't doing well. Slowly, I lost the motivation to study and was discouraged to continue my studying."* Saurav echoed these sentiments, explaining that despite his initial enthusiasm, his academic struggles led to disengagement in his study of diploma level.

Many participants, including Prashanta G. and Prashanta R., struggled with that and mentioned theoretical subjects such as Mathematics, Physics, and Chemistry because their basics were weak, either owing to a gap in education or poor preparations earlier in school. Prashanta G. shares, *"I thought the diploma was going*

to be like TSLC, more practical-based, but it was very different. The theory subjects were really hard for me, and I couldn't keep up with them." Prashanta R. furthered that the medium of instruction was another obstacle. "*I studied in the Nepali medium, and suddenly everything was in English. It was confusing, and I couldn't understand the content, especially in subjects like Physics and Chemistry*" he furthered.

Similarly, Rahul and Saurav cited not being able to cope with academics. "*I was regular in the beginning, but after a few exams came, I realized I wasn't doing well. Slowly, I lost the motivation to study,"* said Rahul. Saurav corroborated, "*Though I felt very enthusiastic during the initial days, the failure in academics led me to be disengaged*".

From the characteristics of dropout, it is also seen that the majority of the students (i.e., 53.97%) who dropout has low achievement in SEE (i.e., below 70%). This indicates that the student performing low in SEE find difficulty in coping with the diploma in civil engineering course.

Language Barriers

One of the major challenges was transitioning from a Nepali-medium background to an English-medium curriculum for many students. Prabin and Prashanta R. cited their personal difficulties in adapting to the English in technical subjects. Prabin shared that "*In TSLC, everything was taught in Nepali, and I was comfortable with it. But in the diploma, suddenly all major subjects were in English, like Mathematics, Chemistry, and Physics, which made me difficulty in understanding them well.*" The language barrier was a problem faced more by those students who had a weak foundation concerning English from earlier education.

Prashanta R., too, had joined from a government school Nepali-medium background and he also echoed the same struggle:

> *I studied in a Nepali medium. Suddenly, everything shifted to English. It overwhelmed me with such subjects as Physics, Chemistry, and Mathematics. I worked hard, but the language was a constant barrier. I couldn't keep pace with the rest of my class.*

He further said the pace of teaching only made matters worse: "*When I asked the teachers to slow down, they said we wouldn't finish the syllabus on time. Sometimes, they would rush through two chapters in one class, and I was left just copying notes without really understanding.*"

Looking at the data of student who dropout, 67.5% students had SEE background from government/community school. This made the prominent issue in language cooperation. So, due to the lack of proper language support from the institutions isolated students like Prabin and Prashanta from the curricula. Without additional tutoring or remedial classes, it was left to them to battle on their own, and this feature weighed heavily in their decision to drop out.

Lack of Institutional Support

The other problem that sets in as one reads through many of the participants is the utter lack of structured academic support on the part of the institutions. For instance, Prashanta G. shared his view that the transition from TSLC to the diploma was somewhat abrupt and there were no extra classes or remedial sessions for students behind. He lamented, "*The college didn't offer extra classes to help with difficult subjects like Mathematics and Physics. I had to search for private tutors, which became expensive. If the college could manage extra classes, maybe I could continue my studies*."

Bibesh shared the same feeling when explaining how the lack of personal guidance from the teachers further exacerbated his academic difficulties: "*There was no proper guidance from the teachers. They didn't seem to care about our attendance or performance, so we started skipping classes frequently*." In fact, lack of involvement on the part of the faculty made academic motivation quite challenging for youngsters like Bibesh. Not systemizing the attendance record or academic intervention allowed students to fall further behind in their studies, which in turn resulted in dropping out.

Similarly, despite doing well in the first semester, Rahul found these institutional shortcomings. As he said,

> *The strict attendance policy is followed by my college, but when students start getting absent or falling behind, nobody bothers. The teachers told my parents about my irregular attendance, but there wasn't any meaningful academic support that could have helped me get back on track.*

Without interventions such as counseling or tutoring, a student like Rahul gradually lost his interest in studies.

Peer Influence and Personal Factors

Diploma programs viewed peer influence as a powerful determinant in the behaviours of the students. For instance, Bibesh attributed his drop in academic

performance to his social group. "*We were the first batch at the college, and the rules were pretty lax. My friends and I started bunking classes, and no one really stopped us. We would just hang out and skip college altogether."* Bibesh said peer pressure, along with the internet facility for which no monitoring was provided by the institution, took him on a road to disengagement: "*The teachers never scolded us or counselled us, so there was nothing stopping us from skipping classes."*

Similarly, Rahul also described how a separation from family and being able to live independently in his rented room focused him on leisure rather than academics. He recounts:

> *I used to play all day in my room, along with my friends. First, I used to attend classes, but then, after some time, I stopped going. Nobody was there to yell at me, and besides, I lied to my parents about going to college.*

His academic performance grew worse with time, and it would reach to that extent when Rahul would procrastinate, and something was necessary for him to avoid. By that time, when his parents realized what was happening and did something, it was too late; he had already decided to drop out.

There is little doubt that peer influence and the freedom associated with living away from family support systems had much to do with the decisions of both Bibesh and Rahul to abandon studies.

Job Market Perception and Economic Pressure

Several of the dropouts interviewed cited poor job prospects and a lesser economic return on investment in a diploma as deciding factors for dropping out. Prashanta G., for one, expressed frustrations with limited opportunities available to diploma graduates in Nepal. "*There is no good payment for diploma graduates here. Many of my friends who completed the course are still struggling to find their jobs or getting paid very little.*" This view that the diploma would not lead to a financially rewarding career was supported by other participants, who saw better prospects in alternative routes.

Economically, Sangita was no less burdened, but she faced double difficulties due to gender discrimination in the field of civil engineering. She shared: *"I had a hard time getting employed in civil engineering, since most of the employers never believed that women could do fieldwork, like surveying. They would instead employ men, which made it hard for me to get a job."*

These barriers made Sangita think several times about her career, and she dropped out later for different studies.

For others, such as Prabin, the financial burden was less pressing, but he saw little long-term value in the diploma. Unable to keep up with the academic requirements of the program, Prabin opted for the Nepal Army, which would hire him as a sub-overseer based on his TSLC completion in civil engineering. *"I thought going into the Army was more realistic for me. The diploma was too hard, and anyway, I didn't think it would promise a good job afterward.*" This pragmatic decision reflects the broader economic pressures that shape student decisions about whether to continue their studies or seek alternative career paths.

Instructional approaches play a fundamental role in influencing student engagement, comprehension, and retention in technical education programs. Traditional lecture-based methods, commonly used in many TVET institutions, often emphasize theoretical knowledge over practical applications. This focus on theory can be particularly challenging for students in diploma engineering programs, who may struggle to see the real-world relevance of their studies. Research shows that students who perceive a disconnect between instructional methods and their practical needs are more likely to disengage and, in some cases, consider dropping out (Brophy, 2019). This challenge is intensified when instruction does not accommodate diverse learning needs, particularly among students from socio-economically disadvantaged backgrounds, who may feel unsupported and alienated (Ayres & Sawyer, 2020). Incorporating more hands-on, problem-based learning (PBL) approaches could help bridge this gap by enabling students to work on real-world problems that mirror industry environments, fostering critical thinking and enhancing motivation (Johnson & Smith, 2019).

For students from low-income families, socio-economic pressures are another significant factor that influences their ability to persist in education. These students often juggle academic responsibilities with part-time work or family duties, leaving limited time and resources to fully engage in demanding technical programs (Mitra et al., 2022). These pressures are further compounded when instructional methods lack flexibility or do not accommodate diverse student needs, disproportionately impacting students from economically marginalized communities (Garcia & Morales, 2021). Furthermore, students from low-income backgrounds frequently attend under-resourced schools, which can lead to weaker foundations in essential subjects like

mathematics and science (Owusu-Agyeman, 2022). When faced with lecture-heavy and theoretical instruction in TVET programs, these students can quickly become overwhelmed, leading to increased dropout rates as they struggle to meet academic demands while managing financial stress. A more inclusive approach that incorporates foundational skill-building and gradual exposure to complex topics would create a supportive environment, enabling these students to persist despite socio-economic challenges.

Community attitudes toward education, especially technical and vocational training, can also impact students' motivation to complete their studies. In many communities, there remains a cultural bias that favors traditional academic pathways over vocational education, viewing TVET as a "second choice" or fallback option (Khan & Zia, 2019). This stigma can undermine students' self-perception and persistence, especially when instructional approaches emphasize rote learning rather than skill acquisition and career development. Instructional methods in TVET that highlight the direct connections between classroom learning and workforce applications-such as through career-focused modules, guest lectures from industry professionals, and on-site training-can help students and their communities see the value of technical education. When students perceive their training as directly linked to career prospects, they are more likely to stay engaged and persevere, even in the face of socio-economic or cultural challenges (Hadjiev & Smith, 2020).

Adapting instructional strategies to accommodate the socio-economic realities of students can significantly enhance retention in TVET programs. Flexible learning models, such as blended or distance learning, provide students with greater control over their schedules, allowing them to manage academic and personal obligations more effectively. Research indicates that students who feel supported by flexible instructional approaches demonstrate higher academic satisfaction and retention rates. Additionally, integrating collaborative learning opportunities, like group projects or peer mentorship, fosters a sense of community, which is particularly beneficial for students from underprivileged backgrounds who may lack strong academic support at home (Sánchez et al., 2020). By connecting dropout causes to instructional approaches and the socio-economic realities of students, it is clear that implementing adaptable, practical, and inclusive teaching methods can create a more supportive educational experience, ultimately reducing dropout rates in Nepal’s TVET programs.

The findings from the study, therefore, brought out a few complex and inter-related issues as the causes of dropout rates in the Diploma in Civil Engineering program under CTEVT in Nepal to the fore. These include academic challenges such as difficulties with theoretical subjects and transition to English-medium instruction, compounded by institutional support for which students had to struggle themselves. Peer influence and personal circumstances also played a critical role: social distractions and the freedom associated with living away from family support systems led many students to disengage from their studies. Besides, economic pressures and a perception of limited job opportunities further discouraged students from completing the diploma. Combined, these factors suggest that targeted interventions in the form of improved academic support, language assistance, career counselling, and stronger institutional engagement will be required to meet the dropout phenomenon and improve retention rates within TVET programs.

CHAPTER VI
DISCUSSION ON KEY FINDINGS

In this chapter, I interpret the findings from Chapter IV and relate them to the existing literature, addressing key themes such as academic challenges, socio-economic barriers, institutional support, and the broader context of Nepal's TVET (Technical and Vocational Education and Training) system. The chapter is structured around the study's research questions and the results of qualitative analyses.

Academic Challenges and Dropout

One of the key findings of the study is the significant role that academic difficulties play in student dropout from the Diploma in Civil Engineering program. Qualitative interviews suggest that students struggle particularly with core subjects like Math, Physics, and Chemistry.

According to Shrestha (2023), in the first semester, more students failed than in the last. More precisely, the difficulty of general and applied science courses was the primary reason why most students failed the first (67.85%), second (61.50%), and third semester (66.02%) exams. Due to some students' lack of study habits and weak foundation in mathematics, these students performed worse in applied sciences like mathematics, mechanics, and hydraulics in the third semester (68%) than in general science-related subjects like physics, chemistry, and math in the first (89.28%) and second (93.3%) semesters. In a similar vein, these students disclose that a variety of factors contributed to their failure, including i) student-related factors, ii) curriculum-related factors, iii) school-related factors, and iv) exam-related ones.

Tinto's (1993) theory on student retention emphasizes the importance of academic integration, and the failure to perform in key subjects often leads to disengagement and eventual dropout. This aligns with the experience of participants like Prashanta G. and Prabin, who both reported difficulties with these subjects due to weak foundational knowledge and language barriers.

According to Papier (2009), TVET programs worldwide experience higher dropout rates due to the mismatch between students' academic backgrounds and the

demands of technical education. The vast curriculum and theoretical overload mentioned by several interview participants corroborate this view.

The qualitative data further suggest that these academic struggles are compounded by curriculum-related factors. Participants consistently highlighted the overwhelming characteristics of the syllabus, which leaned heavily on theoretical content with insufficient practical application. This is supported by the TVET Policy 2012, which emphasizes technical skill development but lacks clear directives for balancing theory and practice in diploma-level programs. The mismatch between student expectations and the curriculum, as reported by participants like Saurav and Bibesh, reflects a broader issue noted in the CTEVT Act 1989, which provides a framework for curriculum development but fails to address the diverse academic preparedness of students entering the program.

Language barriers further exacerbated academic challenges, as many students, including Prashanta R. and Prabin, reported difficulties transitioning from Nepali-medium education to English-medium instruction. This issue is particularly relevant given the School Sector Reform Plan (SSRP) 2009-2015, which aimed to improve access to education but did not adequately prepare students for the linguistic demands of higher education. The lack of bilingual resources or institutional support to bridge this gap left many students feeling alienated and unprepared to engage with course materials, leading to disengagement and dropout.

Practical versus Theoretical Learning

There is another recurring theme in their mismatched prior expectation of practical, hands-on learning opposed to the theoretical orientation of the curriculum (Rogan & Aldous, 2005). Most of the students, especially those coming from TSLC, had believed they would be getting more practical-oriented content. According to Prashanta G. and Saurav, this very mismatch in expectations was one of the major factors contributing to their leaving the program.

Several other participants echoed these concerns, noting that the emphasis on theoretical subjects like Mathematics, Physics, and Mechanics made them feel unprepared for the practical demands of the job market. Students felt that the curriculum did not adequately equip them with the skills required for fieldwork and construction, which they believed were more important for their future careers. This gap between the curriculum and the students' expectations was a major factor contributing to dropout rates. Many suggested that more hands-on training, fieldwork,

and real-world applications could help make the program more relevant and engaging, potentially improving retention rates.

Participants' concerns reflect broader issues within the design and delivery of technical education in Nepal. The CTEVT Act 1989, which governs TVET institutions, prioritizes the standardization of technical curricula but does not mandate sufficient integration of practical learning components. This oversight contributes to the dissatisfaction expressed by students like Prashanta and Saurav, who noted that the absence of hands-on training limited their ability to translate theoretical concepts into applicable skills.

Additionally, the lack of practical learning opportunities is particularly problematic in the context of labor market expectations. Employers in the civil engineering field often prioritize candidates with demonstrated practical skills over those with purely theoretical knowledge. This gap is exacerbated by the absence of strong industry partnerships, which could facilitate internships, fieldwork, and real-world training opportunities. The Education for All (EFA) National Plan 2001-2015 emphasizes the importance of aligning educational outcomes with labor market demands, yet its implementation within TVET programs has not adequately addressed the need for experiential learning.

Language Barriers

The findings of this study underscore that language barriers serve as a significant impediment to academic success for students transitioning from Nepali-medium education to the English-medium Diploma in Civil Engineering. This aligns with the broader challenges outlined in policies such as the School Sector Reform Plan (SSRP) 2009-2015, which emphasized increasing access to education but lacked provisions for equipping students with adequate English language skills needed for higher technical education. While SSRP focused on ensuring basic education, it did not address the transitional difficulties faced by students moving into specialized fields where English is the primary medium of instruction.

Students like Prabin and Prashanta R. reported difficulty comprehending English-language course materials, which became a significant obstacle to their understanding of core subjects such as Physics and Chemistry. This challenge resonates with the objectives of the Education for All (EFA) National Plan 2001-2015, which emphasized inclusivity and quality education but failed to account for the linguistic gaps that students from rural and government school's encounter. The lack

of preparatory programs or bridging courses in English further exacerbated these challenges, leaving students unprepared for the linguistic demands of the diploma curriculum.

The TVET Policy 2012, while focusing on equitable access to technical education, does not explicitly address the need for language support systems within TVET institutions. This oversight has practical implications, as students who lack English proficiency are more likely to disengage from their studies due to the psychological stress of navigating a new linguistic environment. For example, Prabin noted that the absence of bilingual teaching resources or opportunities to seek clarification in Nepali made it difficult to grasp complex technical concepts, further alienating him from the learning process.

From a methodological perspective, Tinto's (1993) theory on student retention emphasizes the importance of academic integration, which cannot be achieved without language proficiency in the medium of instruction. The findings show that students who struggled with English felt excluded from classroom discussions and assessments, which further diminished their confidence and motivation. Respondek et al. (2020) highlight the role of perceived academic control, of which language proficiency is an integral part, in predicting academic success. The inability to understand course materials or express ideas effectively in English undermined students' perceived control over their academic performance, leading to disengagement and eventual dropout.

The findings also highlight the psychological toll of language barriers on students. As reported by Prabin and Prashanta R., the constant struggle to comprehend English-language lectures and exams created feelings of isolation and inadequacy. This aligns with the TVET Policy 1999, which aimed to provide equitable opportunities for all students but lacked actionable measures to address the diverse linguistic needs of learners entering technical education.

Institutional Support and Dropout

The findings highlight the critical role of institutional support in student retention, revealing that its absence significantly contributes to dropout rates in TVET programs. As noted by participants like Prashanta G., the lack of extra classes or remedial programs for struggling students exacerbated their academic challenges. This aligns with Tinto's (1993) revision of retention theory, which emphasizes that institutional commitment to student success is central to reducing dropout rates. When

institutions fail to provide essential support systems, such as academic counseling and tutoring, they leave academically underprepared students at a distinct disadvantage.

The absence of structured support systems is particularly concerning in the context of the TVET Policy 2012, which outlines the importance of equitable access and quality education in technical programs. However, the policy lacks detailed provisions for remedial education or additional academic resources to assist students facing difficulties in core subjects like Mathematics, Physics, and Chemistry. Participants' accounts illustrate how this gap forced many students to arrange costly private tutoring, adding financial strain to their existing academic pressures. This further underscores the systemic failure of institutions to address the specific needs of at-risk students, particularly those from economically disadvantaged backgrounds.

Another critical gap lies in the lack of academic counseling services, as identified in the findings. Students frequently reported feeling lost and unsupported, particularly when trying to navigate their academic struggles or manage personal challenges. Counseling services, as envisioned in the School Sector Reform Plan (SSRP) 2009-2015, were intended to foster a student-centered approach to education by offering guidance and support tailored to individual needs. However, the absence of such services in TVET institutions leaves students without the tools to overcome their challenges, contributing to disengagement and eventual dropout.

Furthermore, the lack of flexibility in institutional practices, such as rigid attendance policies and inflexible schedules, adds to the burden on students. Many participants noted that these practices did not account for personal or financial constraints, making it difficult for them to remain engaged in the program. The Education for All (EFA) National Plan 2001-2015, which advocates for inclusivity and support for diverse learners, emphasizes the need for flexible and adaptive educational practices. Yet, the findings suggest that TVET institutions have largely failed to implement these principles, leaving students unable to balance their academic, personal, and financial responsibilities effectively.

From a personal perspective, these findings highlight a pressing need for institutional reform to enhance support mechanisms for students. Establishing remedial programs, academic counseling services, and mentorship opportunities would not only address students' immediate academic needs but also foster a sense of belonging and integration within the institution. This aligns with Tinto's (1993) assertion that successful retention strategies must prioritize both academic and social

integration. Moreover, implementing these measures would better align TVET institutions with the goals outlined in Nepal's educational policies, ultimately reducing dropout rates and improving student outcomes.

In short, institutional shortcomings in providing academic support, counseling services, and flexible practices are key factors driving dropout rates in TVET programs. Addressing these gaps requires a concerted effort to align institutional practices with the principles outlined in national policies, ensuring that all students have the resources and support they need to succeed.

Peer Influence and Personal Motivation

The other dominant theme that surfaced from the interview relates to that of peer influence. To illustrate, both Bibesh and Rahul admitted quite candidly that it was peer pressure that made them increasingly irregular and eventually brought about their failure in academic progress. This brings into sharp focus the question of personal motivation and discipline in technical education courses.

In this perspective, social integration theories focused on peer groups are represented by Spady (1971) and Tinto (1975). This study has identified that while positive interaction with peers generates more retention, negative influences can hasten disengagement and dropout. These findings have implications, therefore, for how schools provide more structured interventions to keep young people engaged.

Economic Factors and Job Market Perceptions

Other factors contributing to dropout included economic pressures and the perceived lack of a good job prospectus after completion of the course (Davies & Elias, 2003). For example, Prashanta G. identified that low wages to be received in future civil engineering jobs did not motivate him to complete his diploma. Other participants, such as Rahul and Prabin viewed that a Diploma in Civil Engineering would not promise lucrative employment.

It has been strongly predicted by OECD (2010) that economic uncertainty and poor labour market outcomes are strong predictors of dropout rates in technical programs. According to participants, the perception that completion of a diploma will not lead to good enough returns in the labour market in Nepal has indeed been parallel to other findings in developing countries.

Socio-Cultural Factors and Gender

The findings of this study indicate that while gender disparities in dropout rates were not significant, women in the Diploma in Civil Engineering program faced

unique socio-cultural challenges that hindered their educational and professional trajectories. Participants like Sangita Khadka reported encountering gender-based biases during job placements, particularly in fieldwork-intensive roles such as surveyor positions. These experiences reflect the broader societal norms and expectations that contribute to the under representation of women in traditionally male-dominated fields like civil engineering.

The TVET Policy 2012, while emphasizing inclusivity and equitable access, lacks specific provisions to address the socio-cultural barriers faced by female students. The absence of gender-sensitive institutional policies, such as mentorship programs, scholarships for women, or targeted support during job placements, exacerbates these challenges. Sangita's experience highlights the need for systemic interventions that can bridge the gap between educational access and real-world opportunities for women in technical professions.

In fact, Needham and Papier (2011) report that females have to face added obstacles in the same course, such as social expectation and gender-based discrimination in the workplace. The experiences related to TVET education, therefore, support such findings and hint at the need for gender-sensitive policies in this education system.

Socio-Economic Challenges and Pedagogical Solutions

To address the issue of student dropout in TVET programs, particularly in engineering, a multi-faceted approach is required. First, schools need to implement economic support mechanisms, such as scholarships or work-study programs, to alleviate financial burdens on students from low-income backgrounds (Yi et al., 2015). Additionally, institutions should focus on pedagogical reforms that foster engagement and reduce dropout rates. Ayres and Sawyer (2004) suggest that teachers play a critical role in either motivating or demotivating students, particularly in high-pressure environments like engineering programs. Therefore, teacher training programs that emphasize interactive and supportive teaching methods are essential to reducing dropout rates.

The introduction of reinforcement strategies, as suggested by Flora (2004), can also help retain students. Positive reinforcement in the classroom, combined with a curriculum that is both challenging and supportive, may address the current high dropout rates in Nepal's civil engineering diploma programs. By aligning classroom instruction with the practical needs of students and providing real-world applications

of the coursework, educators can foster a more engaging and motivating learning environment (Brophy, 1987).

Integrating Curriculum Relevance and Practical Skills

One of the prominent themes that emerged in this study is the impact of curriculum design on dropout rates. Evidence from Chapter V indicates that many students perceive the current curriculum in diploma-level engineering as overly theoretical and lacking practical applications, which aligns with the findings of Brown and Hirschi (2019), who argue that curriculum relevance is essential for student engagement in vocational training. The gap between theoretical instruction and practical skills required in the workforce creates dissonance for students, leading them to question the applicability of their education and, ultimately, to consider leaving their programs. In this context, adapting the curriculum to include industry-relevant, hands-on training could bridge this gap, as seen in programs with strong practical components that retain students more effectively (Hadjiev & Smith, 2020).

From my perspective, addressing curriculum alignment with industry requirements could significantly reduce dropout rates by enhancing students' perceptions of program value. Implementing periodic internships, practical workshops, and partnerships with local industries could serve as strategic interventions, providing students with real-world experience that not only reinforces theoretical concepts but also increases their employability.

Financial Constraints and Economic Pressures on Retention

The findings in Chapter V reveal that financial constraints are a critical factor influencing dropout, particularly for students from economically disadvantaged backgrounds. This aligns with Mitra et al. (2022) and, Garcia and Morales (2021), who identify financial insecurity as a barrier to persistence in education. In Nepal, many TVET students rely on family support, which is often strained by low incomes and the rising costs associated with technical education. Scholarships and financial aid programs are frequently mentioned as solutions; however, evidence from Chapter V suggests that these measures are not universally accessible, leaving a significant portion of students vulnerable to economic pressures.

Based on these findings, I believe that targeted financial assistance programs are crucial for improving retention in Nepal's TVET programs. Expanding financial aid to include not only merit-based scholarships but also need-based grants for students facing economic hardship could help alleviate the financial burden on

families. Additionally, institutions could explore flexible payment structures or work-study programs to support students' financial needs while allowing them to focus on their studies.

Importance of Academic Support and Mentorship

Another key insight from the study is the role of institutional support, particularly in the form of mentorship and academic advising. In Chapter V, students reported struggling with foundational subjects like mathematics and physics, which are essential for success in engineering programs. This finding is consistent with studies by Owusu-Agyeman (2022) and Smith and Robertson (2021), who highlight the importance of supplemental instruction in retaining students with academic difficulties. Furthermore, mentorship from faculty and industry professionals emerged as a critical factor for student persistence, offering guidance, encouragement, and career insights that motivate students to complete their programs.

Drawing from both the literature and research findings, I propose that TVET institutions should develop structured mentorship and tutoring programs specifically for challenging subjects. Institutions could assign experienced students or faculty members as mentors for new students, creating a support network that not only addresses academic challenges but also builds a sense of community and belonging. This approach aligns with Tinto's (1993) retention theory, which emphasizes the importance of institutional commitment and support in reducing dropout rates.

Social Support Networks and Peer Influence

The findings in Chapter V also underscore the importance of social support networks, as students frequently cited peer influence and family encouragement as factors affecting their persistence. Research by Sánchez et al. (2020) and Roberts and McPherson (2021) support this view, demonstrating that peer and family support contribute significantly to student motivation and resilience. In many cases, students who lack strong social support networks may feel isolated or overwhelmed by academic challenges, increasing their likelihood of dropout. For instance, students with active peer study groups or family encouragement tend to be more engaged and persistent in their studies, as observed in my findings.

To capitalize on this insight, I believe TVET institutions in Nepal could foster stronger social support mechanisms by promoting study groups and peer collaboration initiatives. Family outreach programs could also educate families on the importance of supporting their children's educational journeys, thereby reinforcing students'

commitment to completing their diplomas. By actively fostering a supportive community, institutions can create a positive environment that mitigates some of the socio-cultural and economic pressures students face.

CHAPTER VII
CONCLUSION AND IMPLICATION

Conclusion

The contribution of the study provided a broad overview of the factors associated with higher dropout rates in the Diploma in Civil Engineering program in Nepal. Major challenges identified which correlate to a contribution in student dropout are academic struggles, peer influence and economic pressures, and institutional shortcomings. The academic difficulties were one of the major variables that caused the dropout rate within the core areas in Math, Physics, and Chemistry. This problem is further aggravated by weak foundational knowledge, poor language proficiency at the time of entrance, and a lack of academic support systems. Such attributes ensure that remedial classes or tutoring are not available when needed, and struggling students leave without a resource they may well need to succeed.

Apart from that, peer influence and social distractions too have been mentioned as being a contributing factor in the disengagement of students. That fact that all these negative influences had not been checked by some form of institutional supervision, including attendance monitoring or regular counselling, had contributed to greater disinterest in academics and eventually dropping out. The economic reasons, more particularly the lack of sufficient perceived rate of return for the investment in the Diploma in Civil Engineering, have been another major factor. This is a cut-out option for the students either to drop out or seek employment opportunities abroad because of the high economic pressure level and difficulty in securing well-paid jobs after graduation from college.

In addition to these factors, there was a lack of key enabling institutional supports: academic and career advising; language supports; and an overly theoretically-oriented curriculum. These factors created a context within which extreme numbers of students found it particularly difficult to engage with the academic program of study. Apart from that, there was a mismatch between aspirations for pragmatic, useful education on the part of students and highly theoretical curriculum. Finally, broader policy and structural issues exacerbated the

problem. Moreover, financial constraints and limited job opportunities were present, which have also hit hard on students from marginalized communities and female students, who have more difficulties in securing proper jobs in male-dominated professions like civil engineering. The problems are structural and require policy reforms, financial assistance, and gender-sensitive measures that may help increase student retention and enhance overall program effectiveness.

These findings underscore the need for systemic reforms in Nepal's TVET system. Policies must prioritize creating a balance between theoretical and practical learning to ensure students are equipped with job-ready skills. For instance, the TVET Policy 2012 and CTEVT Act 1989 should mandate more fieldwork, real-world training, and industry-aligned curricula. Additionally, remedial programs and academic counseling should be institutionalized to support struggling students. Bridging programs to improve English proficiency for students from Nepali-medium schools must also be integrated into the framework to facilitate smoother academic transitions.

In short, addressing the high dropout rates in TVET programs requires a multi-faceted approach involving institutional, structural, and policy-level reforms. By aligning curricula with labor market demands, enhancing support systems, and addressing the socio-economic barriers faced by students, Nepal's technical education system can become more inclusive, relevant, and effective. Such reforms will not only improve student retention but also contribute to the development of a skilled workforce capable of driving the country's socio-economic growth.

Implications

The findings of this study reveal the complexity of the dropout phenomenon in TVET diploma programs, particularly in Civil Engineering, and emphasize the interconnectedness of academic difficulties, peer influences, economic pressures, and institutional shortcomings. These factors collectively highlight the need for multi-dimensional strategies that address both systemic and individual challenges to improve retention and student outcomes.

A key implication of the findings is the importance of aligning the TVET curriculum with the practical expectations of students and the demands of the labor market. The gap between theoretical content and practical applications often leaves students feeling unprepared for real-world engineering roles, which can contribute to dropout. This suggests that curriculum reforms that integrate hands-on learning and

field-based training are essential for better engagement and relevance. Such reforms would allow students to develop job-ready skills, which align with labor market needs and student aspirations.

Another significant implication concerns the role of academic support in mitigating dropout rates. The absence of remedial classes, language transition support, and academic counseling has been shown to disproportionately affect students with weak foundational knowledge and those transitioning from Nepali-medium education. Institutions could benefit from incorporating systems that identify at-risk students early and provide targeted support, such as personalized academic counseling and supplementary classes. These measures could address learning gaps and facilitate smoother academic transitions, ultimately enhancing student persistence.

The influence of peers and social environments is another critical factor. While peer groups can foster a sense of belonging, negative influences, such as disengaged peers, often exacerbate dropout risks. The findings suggest that structured interventions like mentorship programs and stricter attendance policies could help mitigate these risks. Institutions could focus on fostering positive peer networks and creating environments where students feel supported and encouraged to engage with their studies.

Economic pressures and the perceived lack of sufficient returns on investment in technical education present additional challenges. The findings suggest that scholarships and financial aid targeted at economically disadvantaged students could alleviate financial stress and reduce dropout rates. Expanding career counseling services to guide students toward viable job opportunities could also help bridge the gap between education and employability. Such measures could improve perceptions of TVET programs as pathways to stable and rewarding careers.

Gender-specific challenges also emerge as an important area of focus. Female students in male-dominated fields like civil engineering often face added barriers, including workplace biases and societal expectations. The findings imply that institutions and policymakers could benefit from introducing gender-sensitive initiatives, such as mentorship programs and targeted incentives for employers to hire female graduates. Addressing these structural issues could foster a more inclusive learning and working environment, encouraging more women to complete their studies and pursue careers in technical fields.

Finally, the findings underline the need for broader systemic reforms within curriculum and institutional practices. Aligning the curriculum with labor market needs, investing in academic support systems, and fostering industry partnerships could improve the overall effectiveness of TVET programs. While existing policies, such as the TVET Policy 2012, SSRP 2009-2015, and TSSP 2023-2032 have made strides in improving access and inclusivity. Along with that they require further refinement to address the specific challenges dropout in diploma-level engineering students.

The following are some key implications for improving student retention in TVET diploma programs.

Curriculum Reform: The curriculum at present scenario focuses a lot in theoretical knowledge rather than the practical aspects. So, the introduction of a more practical-oriented curriculum would bridge the gap between theoretical content and its application in real life, thereby addressing more to the expectations of the students.
Academic and Language Support: Most of the institutions basically focus on completing the courses on time. This creates the situation of difficulty for the academically poor students and the students from Nepali medium. For this, the institution can provide more academic support, remedial classes and language support for students who face difficulties with their foundational subjects and transition to the only English medium. Academic counselling is another necessary task that an institution should provide for early identification of students at-risk of dropout and hence provide the required support for the students.

Peer and Social Support: For the reduction of dropout, it is better to the institutions for establishment of peer mentorship programs with strict attendance policies, coupled with counselling when students become disengaged. This will help reduce negative peer influences and social distractions resulting in minimizing the dropout.
Financial Aids: Although CTEVT provides different scholarships, the criteria of scholarships and grants for economically disadvantaged students must be expanded. The grant can also be provided to the institution that can involve career counselling which guides students to job market opportunities in order to enhance their employability.

Institutional Policies for Gender Support: Many female students hesitate of studying diploma in civil engineering. So, we have very few enrolments of female

students in diploma civil engineering. So, institutions should have policies embracing the accountability of gender sensitivity through mentoring, providing incentives to employers to hire women, and many other means, at least in civil engineering studies.

In short, the findings of this study provide valuable insights into the factors driving dropout rates in TVET programs and their implications for policy and practice. By understanding the nuanced interplay of academic, social, and economic influences, institutions and policymakers can work towards creating a more supportive and responsive TVET system. This would not only enhance student retention but also ensure that technical education contributes effectively to the development of a skilled workforce aligned with Nepal's evolving labor market demands.

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QUESTIONS FOR INTERVIEW

Section 1: Introduction

1. **Can you please introduce yourself and share your educational background?**

   Purpose: To understand the participant's background and context.

2. **What motivated you to enroll in the Diploma in Civil Engineering program?**

   Purpose: To explore the reasons behind choosing the program.

Section 2: Experience During the Program

3. **Can you describe your overall experience in the Civil Engineering program?**

   Purpose: To gather insights into the participant's experience within the program.

4. **Were there any specific challenges you faced during your studies?**

   Purpose: To identify difficulties that may have contributed to the dropout.

5. **How did these challenges impact your decision to continue or discontinue the program?**

   Purpose: To understand the link between challenges and dropout decisions.

6. **Were there any aspects of the curriculum or teaching methods that you found particularly difficult?**

   Purpose: To explore the role of academic content and delivery in the dropout decision.

Section 3: Support Systems and Institutional Factors

7. **What kind of support (academic, financial, emotional) did you receive from the institution during your studies?**

   Purpose: To assess the effectiveness of institutional support systems.

8. **Did you feel that the support provided was sufficient to help you overcome the challenges you faced? Why or why not?**

   Purpose: To evaluate the adequacy of the support offered.

9. **How did the institutional policies and environment influence your decision to stay or leave the program?**

Purpose: To explore the impact of institutional factors on dropout decisions.

Section 4: Personal and Socio-Economic Factors

10. **Can you share any personal or socio-economic factors that affected your ability to continue in the program?**
    Purpose: To identify external factors that may have contributed to the dropout.
11. **How did your family or social network react to your decision to enroll in and later leave the program?**
    Purpose: To understand the influence of social and family dynamics on dropout decisions.
12. **Were there any financial constraints that influenced your decision to drop out? If so, how?**
    Purpose: To explore the role of financial factors in dropout decisions.

Section 5: Perception and Future Plans

13. **Looking back, what do you think were the main reasons for your decision to drop out of the program?**
    Purpose: To summarize the participant's perception of the key factors leading to dropout.
14. **Do you have any suggestions for how the program could be improved to reduce dropout rates?**
    Purpose: To gather feedback for improving the program and reducing dropout rates.
15. **What are your current plans, and do you have any intentions of returning to complete the program in the future?**
    Purpose: To understand the participant's future aspirations and possibilities of re-enrollment.
16. **Is there anything else you would like to share about your experience in the program or your reasons for dropping out?**
    Purpose: To allow the participant to share any additional thoughts or insights.