

DURBAN UNIVERSITY OF TECHNOLOGY

**ROLE OF CO-OPERATIVE EDUCATION IN PREPARING STUDENTS FOR PROFESSIONAL
SKILLS AT THE DURBAN UNIVERSITY OF TECHNOLOGY**

NDUKENHLE INNOCENT MATHE

NOVEMBER 2024



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FOR PROFESSIONAL SKILLS AT THE DURBAN UNIVERSITY OF
TECHNOLOGY**

BY

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DECLARATION

I, Ndukenhle Innocent Mathe, hereby declare that this dissertation is original, and all the content is appropriately acknowledged and explicitly referenced. A bibliography is appended to the dissertation. Furthermore, it represents my own opinion and not necessarily those of the Durban University of Technology.

I also certify that the dissertation has not heretofore been submitted in any of its parts or entirety for a degree of Master of Philosophy Management Sciences, Specializing in Public Administration in any other institution of higher learning locally or internationally.

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Date: 07 September 2024

Ndukenhle Mathe

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DEDICATION

To my beloved family,
Mother Lungile and Father Senzo Mathe,
my dear siblings Thebelihle, Sithelele, Amen, Buhle, Nzuzo, and Zothani,
and to my wonderful daughters, Ase and Ndalo.

Your unwavering support and love inspire me every day. This is for you.

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ABSTRACT

This study focuses on the role of Co-operative Education (Co-op) in preparing students for professional skills at the Durban University of Technology (DUT). The research addresses the challenge of graduates lacking adequate employability and professional skills in a competitive job market, which affects students, employers, and policymakers. The aim of the study was to determine how Co-operative Education programmes influence students' learning and professional skill development. A mixed-methods approach was used, combining quantitative surveys and qualitative interviews with DUT students who participated in Work-Integrated Learning (WIL) programmes across six faculties. A sample of 313 students was selected to ensure reliable and representative findings.

The results showed that 84.7% of students reported enhanced professional skills, including teamwork, communication, and problem-solving abilities, while 58.1% strongly agreed that WIL was effectively integrated into their academic curricula. The findings revealed that institutional support, strong faculty-industry collaboration, and structured learning experiences play a critical role in the success of Co-op initiatives.

This study contributes valuable insights into how Co-operative Education can bridge the gap between academia and industry, improve graduate employability, and align higher education outcomes with national skills development strategies. In conclusion, the research highlights the importance of strengthening WIL integration and industry partnerships to ensure that students are better equipped for professional success and that higher education remains responsive to evolving labour market demands.

Key Words: Co-operative Education; Work-Integrated Learning (WIL); Professional Skills Development; Graduate Employability; Durban University of Technology; Higher Education; Industry Partnerships; Skills Gap; Experiential Learning; South Africa

CHAPTER ONE

1. INTRODUCTION

Graduates from higher learning institutions face challenges as they shift from the academic environment to the fast-evolving global workforce. Their discipline-based knowledge and skills often need to be understood and leveraged beyond the specific program of study to meet and adapt to changing labour market needs and opportunities (International Labour Organization, 2022).

New graduates confront unique challenges, chief among them is the capacity to navigate and prosper in a dynamic and rapidly changing professional environment. While higher education institutions may occasionally lag in responding to emergent technical and content needs, they are well positioned to improve the achievement of the more generalizable, transferable, employable applicable professional skills and knowledge they convey to their students, regardless of discipline (Reinhard, Wynder, and Kim, 2020).

These skills are often referenced in graduate attributes and course learning outcomes and comprise many professional skills employers cite as being needed in the workplace: problem-solving, communication, numeracy and literacy, teamwork, critical and analytic thinking, and leadership. Although faculties have confidence in developing these in their students, they are often indirectly taught, not formally evaluated, or so entrenched in a disciplinary context that students fail to spot them and see their value beyond the course in which they were educated (Osmani, Weerakkody, and Hindi, 2018). According to Solo Project (2016), a commitment to creating more ways for institutions and workplaces to connect their learning while maintaining their very different mandates and goals. Better developing students' self-direction and ability to mobilize professional skills and knowledge across multiple contexts will help reframe the discouraging challenge of

navigating rapid change to an exciting prospect, filled with opportunities for personally creating several meaningful and diverse careers over one's lifetime.

Professional skills are required by industries whenever they are recruiting for any position available. McMurray, McQuaid and Richard (2016), endorse work placements

as an important link for undergraduates and graduates to the labour market and for developing professional skills. The only way for students to gain and develop professional skills from real-life work experience is through co-operative education work, which integrates learning placement into the relevant industry.

The main objective of this study is to investigate current practices in Work Integrated Learning (WIL) management at Durban University of Technology (DUT). To work with DUT students to interpret general education attitudes into the WIL perspective to advance student placement, participation and development. Subsidize transformation in university principles, strategies, guidelines, and procedures to qualify better support for students from diverse backgrounds to partake in WIL. In this research study, the researcher is going to investigate students' needs, challenges, and any other issues of WIL as the DUT programme that is developing student's employability skills that are needed in the workplace. Questionnaires, interviews, and observation will be used as data collection using both qualitative and quantitative approaches to analyse the outcomes of this research.

1.1 Definitions

1.1.1 Co-operative Education (Co-op): According to Bowering, Frigaul, and Yue (2020), co-op is a type of education that combines academic learning in the classroom with real-life practice in an appropriate workplace. Co-op is a relationship between students, higher education institutions, and employers that provides a variety of learning opportunities. Students can gain real-life experience through corporate placements or internships, which can serve as entrance into a specific community of practice.

1.1.2 Work-integrated learning (WIL): According to Reinhard, Wynder, and Kim (2020), WIL is the practice of combining traditional academic study, or formal education, with student exposure to the world of work in their chosen profession, with the primary goal of better preparing students for entry as employees. WIL has several forms, each of which inspires students to engage in trustworthy work habits and study and practice applying skills and information in a real-world situation. Work placements, internships, fieldwork, job shadowing, and joint education are all available options. In addition, WIL can be defined as profession-focused education in which theoretical and

practical knowledge are combined in a well-designed professional curricular setting to prepare students for work contexts.

1.1.3 Skills development: The Skills Development Act (Republic of South Africa, 1998) is to confirm that students have admission to opportunities for skill attainment and make space for the new participants in the labour market to improve work knowledge.

1.1.4 Real-life experiences: Agwa-Ejon, and Pradhan (2017) refer to this term as the professional experiences that the students encounter during their fieldwork, internships, and Work-integrated learning.

1.1.5 Professional skills: According to Burke, Scurry, and Blenkinsopp (2020), graduates must acquire certain skills to be effective in their expert practice. These abilities range from very particular ones related to the graduate's field(s) to more broad and transferable ones like communication and ethical behaviours.

1.1.6 Professionalism: Dubai, Adelstein, Taylor, and Shulruf (2019) refer to this term as the set of attitudes, behaviours, and values that are expected of individuals in a particular profession. Professionalism includes qualities such as integrity, accountability, and competence. it sets the standard for how DUT graduates should behave and conduct themselves in their work environment.

1.1.7 Time management: Yassin and Abdelmaguid (2022) refer to this term as the ability to plan and use time effectively and efficiently. Time management involves prioritizing tasks, scheduling activities, and avoiding distractions. it helps DUT graduates to be more productive, manage their workload, and meet deadlines.

1.1.8 Communication: According to Jackson and Wilton (2016) is the exchange of information and ideas between individuals. Communication can be verbal, non-verbal, or written. Real communication is central in the workplace, as it enables partnership, shapes associations, and confirms that everyone is on the same page. it helps DUT graduates understand how to communicate effectively, which is a key skill in any profession.

1.1.9 Adaptability: Agwa-Ejon, and Pradhan (2017) refer to this term as the ability to adjust to new conditions and varying environments. Adaptability includes being

flexible, open-minded, and eager to learn new things. it helps DUT graduates to be more resilient and better equipped to handle challenges and uncertainties in the workplace.

1.1.10 Leadership: According to Jackson and Wilton (2016) is the ability to inspire and influence others towards a common goal. Leadership involves setting a vision, creating a strategy, and motivating and empowering others to achieve it. it helps DUT graduates understand what it takes to be an effective leader, which is a valuable skill in any profession.

1.2 Research Problem and Aim

Today's public and commercial companies require professional capabilities for all entry-level positions. The South African Department of Public Service and Administration advertised job openings for recent graduates in four professional categories (Finance, Administration, Human Resource Management, and Marketing). The most common skills required were communication, adaptability, computer literacy, problem-solving, critical thinking, teamwork, time management, interpersonal, and motivation.

It is critical for higher education institutions to understand employer skill requirements so that their graduates can better meet them (McMurray, 2016). As a result, university students must be prepared for the real-world problems and possibilities that await them after graduation. Zehr and Korte (2020) assert that real-world learning opportunities can help students build their professional skills. WIL's major resolve is to provide graduates with the full skill sets necessary for potential employers (Khampirat, Pop, and Bandaranaike, 2019). As stated by Reinhard, Wynder and Kim (2020), cooperative education provides students the chance to gain fundamental practical skills by exposing them to the working world. Work-integrated learning enables students to experience a foreign culture firsthand, which is the best way to understand it.

WIL activities, particularly placements, often occur during regular academic periods and require a shared understanding of objectives, context, and performance expectations as students move between educational and workplace settings. When WIL is scheduled during lecture periods without proper planning, students may be disadvantaged, as they are forced to choose between attending classes and completing their placements. Therefore, the purpose of this study was to examine how Co-

operative Education programs influence students' learning and the development of their professional skills.

1.3 Objectives of the study

The research seeks to evaluate how co-operative schooling affects DUT students. Specifically, to determine the level of practical experience, professional skill development, and active experimentation during Work-Integrated Learning.

1.3.1 Sub-objectives:

- Investigate DUT alumni's observations regarding employability abilities that aid in hiring recent graduates.
- To identify any deficiencies in the way cooperative education initiatives are currently delivered.
- Investigating issues that have an institutional impact on the operations of experiential learning and cooperative education and making sure those issues are taken care of.
- Acquiring and organizing data related to cooperative education.
- To identify strategies for promoting the program on experiential learning.
- To guarantee that the institution correctly implements the Co-operative Education policy.

Archiving the goals mentioned above is crucial as it facilitates the establishment of a well-defined comprehension of the study's aim and objectives. This guarantees that the research is methodical, organized, and focused, which facilitates the achievement of the intended results. Archiving objectives lowers the possibility of deviating from the original plan by ensuring that the study stays on course and helps to monitor progress. Furthermore, archiving objectives offer a precise framework for analysis, which facilitates the formulation of recommendations and conclusions based on the results. Future research as well as enhancing the efficacy of experiential learning and cooperative education initiatives might benefit greatly from this.

1.4 RESEARCH QUESTION

1.4.1 Primary research questions

- What is the role of Co-operative education in preparing DUT students for real-life work and professional skills through WIL?

1.4.2 Secondary research questions

The following secondary research questions will be addressed.

- What is the relationship between Co-operative education unit, students, industry, and DUT academic departments with regards to the WIL activities such as student work placements and monitoring?
- How can Co-operative education improve support for WIL?
- How is Work-Integrated learning benefiting the DUT Students and Employers?
- How is the Co-operative Education department marketing WIL to students and employers?
- How can the DUT best meet the skills required by public and private employers?

1.5 Context of the Study

There is a need for the DUT Co-operative Education department to build and sustain industry partnerships that result in a successful work-integrated learning implementation. Industry partnerships are essential for effective work-integrated learning, requiring collaboration among students, industry, and universities that is balanced, well-structured, and integrative (Ferns, Russell, Kay, and Smith, 2016). The building and sustaining of partnerships strengthen the relationship for WIL implementation. This develops student's employability and improves professional skills.

Partnerships play a crucial role in assisting new graduates in securing their first employment opportunities. Such collaborations can also facilitate the progression of work-integrated learning (WIL) student placement projects into actual employment outcomes. As Wyonch (2023) highlights, WIL programs are associated with improved labour market outcomes, including higher employment rates and better alignment between graduates' occupations and their fields of study. Additionally, WIL extends

beyond traditional work placements and credit-earning activities, encompassing broader experiential and professional development opportunities (Matsoso & Benedict, 2020).

WIL aims to improve people's capacity to apply knowledge and abilities to the needs of the working environment and everyday life. Additionally, WIL gives students the chance to learn by doing, comprehending their place in the workforce, and using their abilities to carry out responsibilities (Ajjawi, Tai, Huu, Nghia, Boud, Johnson, and Patrick, 2020).

The experience necessitates combination, which means helping students develop the critical thinking and analysis abilities necessary to reflect on and analyse their real-world knowledge as part of continuous, lifelong learning. In addition to learning useful new information and abilities, students are exposed to higher standards of introspection and self-improvement. Possessing the right information and abilities is essential for personal and professional success (Dorasamy and Rampersad, 2018).

1.6 Research methodology

This section will provide a detailed argument on the research development adopting Morgan's (2018) research onion layer framework to facilitate the achievement of the research objectives. Hence, the research onion layer will support a better understanding of the application of the quantitative approaches. The methodology will use a concurrent design for data administration and collection of the three research tools (questionnaires, interviews, and focus groups). Thereafter, a detailed discourse on the identification of the sample population and sampling methods will be discussed. In addition, the quantitative tool used for measurement was a 5-point Likert scale, while the qualitative tool used open-ended surveys or interviews.

The data collection procedures, including sample size, data sources, and the significance of ethical considerations for the research will also be discussed. In addition, Chapter 5 will cover the ethical considerations, including participant-informed permission, anonymity, and study secrecy as well as the institution's ethical clearance (IREC). The chapter will end with data analysis techniques, which include definitions for statistical analysis.

1.7 Significance of the study

The competitive entry-level job market for graduates is the basis for the study's significance, but employers across all professions are also requesting highly skilled graduates (Spanjaard, Hall, and Stegemann, 2018).

Companies have strong opinions about the professional abilities that recent graduates must possess to compete, therefore graduate students are under increasing pressure to continue developing their talents in areas that boost their employability and complement their academic degrees (Spanjaard, Hall, and Stegemann, 2018).

The study's significance stems from the fact that to improve their employability in a competitive labour market, graduate students must acquire professional skills that supplement their academic programs. This study aims to determine the impact of Co-operative Education programmes on student learning and the acquisition of professional skills, which can provide valuable insights for educators, employers, and policymakers.

The findings of this study can help academics design Cooperative Education programs that effectively enhance students' professional skills and employability. Employers can use these findings to understand the benefits of hiring graduates with Co-operative Education experience and adjust their hiring practices accordingly. Policymakers can use these findings to make informed decisions about funding and support for Co-operative Education programmes. This study can contribute to bridging the gap between academia and industry, helping students develop the skills and experiences necessary to succeed in their careers, and addressing the skills gap that exists in the current job market.

1.8 The following will greatly benefit from the study's findings:

Durban University of Technology: Graduates will grow more because of this study. Furthermore, it encourages novel approaches to improving knowledge, abilities, and mindset, readying graduates for future employment in a global economy. It also supports the curriculum's progress and the undergraduate training strategy.

Graduates: will know what professional skills new graduates need to compete. The assessment will focus on the work-integrated learning program's effectiveness in fostering the ability to apply knowledge and acquire professional skills. It will also

concentrate on the attitudes and approach of recent graduates towards entering the workforce, the professional skills acquired during the program, and the calibre of services provided by the Department of Co-operative Education to students during their study period. The WIL students' performance in the classroom and real-world situations will be enhanced by the data collected.

Employers/Recruiters: will be provided with information regarding the professional skills of DUT new graduates that will allow the recruiters to recruit future leaders.

1.9 Scope of the study

his study focuses on the development of professional skills among DUT students, specifically examining how the skills they acquire during their WIL experiences align with the skills required by public and private industries for entering a competitive workforce. The study will be limited to DUT students who have completed their WIL experiences, particularly those who finished within the past three years. Data will be collected through surveys and interviews with these students. The information gathered will be used to analyze the professional skills DUT students have developed through their WIL experiences and to identify any gaps between the skills acquired and those demanded by industry.

1.10 Theoretical framework

According to Varpio, Paradis, Uijtdehaage, and Young (2020), a theoretical framework is a conceptual framework that clarifies and directs a researcher's perspective on their study. It provides a foundation for understanding the relationships between variables in a research project and helps to establish the context and scope of the study. Theoretical frameworks are often used in social science research but can be applied to any research area.

A theoretical framework generally consists of a set of concepts, assumptions, and propositions that describe and explain relationships between variables. It can be developed by drawing on existing theories or by creating a new one. The framework provides a way to organize and justify the data collected during a study, and it can help

to guide the development of hypotheses and research questions (Varpio, Paradis, Uijtdehaage, and Young, 2020).

1.10.1 Elements of experiential learning theory:

The study's parameters, such as the population, region, and period under investigation, are referred to as its scope. In addition to structuring and organizing research, a theoretical framework can direct the formulation of research questions, hypotheses, and data analysis.

The experiential learning theory of Kolb (1984) was chosen as the study's framework. This theory is founded on the observation that learning occurs when an individual identifies a personal experience and transforms that experience over his or her effect, insights, understandings, and/or behaviours. Four fundamental learning modes—concrete experience, reflective observation, abstract conceptualization, and active experimentation—were included in his approach. In the modern world, Kolb's experiential learning is still applicable. Kolb's (1984) idea of experiential learning is a theoretical framework often used in educational research to explain how individuals learn through experience.

Kolb's theory suggests that effective learning occurs when all four stages are engaged in a cycle, with each stage influencing the next. The theory also suggests that learners have preferred learning styles that influence how they engage with each of the stages in the cycle. For instance, some students prefer to begin with real experience, while others may prefer to commence with intellectual conceptualization.

The researcher shows that they are interested in understanding more about how people pick up knowledge and skills via active experimentation, reflection, and firsthand experience by using Kolb's experiential learning theory as the foundation for their investigation. According to Kolb's theory, learning happens in four stages: abstract conceptualization, active experimentation, reflective observation, and concrete experience. In addition to providing a thorough model for comprehending the learning process, this framework can be a useful tool for creating and assessing educational interventions and learning opportunities.

The capacity of Kolb's experiential learning theory to arrange and structure the study is a crucial feature of employing it as a framework. Through the identification of the four phases of the learning cycle, the framework offers a well-defined structure for understanding the process of learning and facilitating its empirical investigation. To ensure that the research is focused and coherent, this framework directs the formulation of research questions, hypotheses, and data-gathering techniques.

The identification of variables that may affect learning outcomes can be guided by Kolb's experiential learning theory. The idea, for instance, highlights the significance of individual variances in learning style and implies that people could favour some phases of the learning cycle over others. Through the integration of learning style assessments into the research framework, the investigator can investigate the potential effects of individual variations on learning procedures and results.

Kolb's framework can guide data analysis by providing a theoretical lens to interpret findings. For instance, the researcher may use the stages of the learning cycle as a framework for organizing and categorizing qualitative data, such as reflective journals or interviews. This allows for a systematic analysis of how participants engage with the learning process and how their experiences evolve.

Kolb's experiential learning theory offers a robust framework for investigating how individuals learn through experience and how the learning cycle can be leveraged to design effective learning experiences. By organizing and structuring the research, guiding the development of research questions and data analysis, and identifying factors that may influence learning outcomes, this framework provides a comprehensive approach to studying the dynamics of learning in educational settings.

1.10.2 Key Concepts

The main concepts in a research study refer to the core ideas or constructs that form the foundation of the investigation. These concepts are critical for identifying relationships between variables and developing the theoretical framework of the study. For instance, in examining the impact of social media use on mental health, key concepts may include patterns of social media usage, indicators of mental health, and factors influencing online behaviour (Creswell and Creswell, 2018).

➤ **Assumptions:**

The fundamental ideas or precepts that support a study's theoretical framework are known as assumptions. These presumptions shape the researcher's perspective and influence how results are interpreted. They may be based on theoretical frameworks, prior studies, or the researcher's own convictions and are often implicit. For example, assumptions about the effectiveness of a new teaching approach might include the belief that teacher preparation influences instructional quality and that active learning enhances student engagement (Cohen, Manion, and Morrison, 2018).

➤ **Propositions:**

Propositions are theories or predictions about the relationships between variables derived from a study's theoretical framework. These hypotheses serve as tentative statements that guide the research process and inform data collection and analysis. They are developed based on prior research findings and the researcher's theoretical understanding. For example, a hypothesis in a study examining the relationship between exercise and stress reduction might propose that higher levels of physical activity are associated with lower perceived stress (Creswell and Creswell, 2018).

➤ **Variables:**

Variables are the specific factors or characteristics being studied and measured in a research study. They can be classified as independent variables, which are operated or controlled by the researcher, and dependent variables, which are the outcomes or answers influenced by the independent variables. Moderating or mediating variables that influence how the independent and dependent variables are related might also be considered variables. For example, sleep length is the independent variable, cognitive performance is the dependent variable, and covariates like age, gender, and coffee consumption may act as moderators in a study focusing on the relationship between sleep duration and cognitive performance (Cohen, Manion, and Morrison, 2018).

Essential concepts, presumptions, claims, and variables are what make up a research study's theoretical framework. They provide a structured framework for understanding the relationships between variables and formulating hypotheses about the phenomena

under investigation. By clarifying these components, researchers can effectively design and conduct their studies, leading to meaningful insights and contributions to the field of inquiry.

1.11 Content of the chapters

CHAPTER1: INTRODUCTION

This chapter serves as an introduction to the study, outlining the issue description, objectives, and objectivist viewpoint.

CHAPTER 2: Literature Review

The literature study gives the reader an understanding of the professional abilities needed in the industry and makes the case for why work-integrated learning is advantageous for DUT graduates.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter will go through the procedures that will be followed for data collecting and analysis to provide answers to the study's research questions. It defines how data will be collected and explains the research design, sample strategies, and data collection methods that will be employed.

CHAPTER 4: ANALYSIS AND PRESENTATION OF DATA

The data analysis and conclusions from the questionnaires that DUT students who took part in the study will be covered in this chapter.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

The investigation will come to an end in this chapter with a presentation of the study's findings, which will be examined and discussed. The chapter will conclude with suggestions for additional investigation.

1.12 SUMMARY

This chapter introduced the study, outlining the objectives and research problem. An overview of the thesis gave context for the investigation and an indication of future directions. A summary of the study, including the goals and the research challenge, is provided in the introduction chapter. The requirement for graduates and students to acquire professional skills and improve their employability in a competitive work market is highlighted as the research challenge. The study's objective is to ascertain how Co-operative Education programs affect students' learning and development of professional skills. An overview of the thesis, including the study's history and expectations for subsequent chapters, is also included in this chapter. Emphasis is placed on the study's importance since it can help students, employers, and policymakers bridge the knowledge gap between business and academia and close the skills gap in the labour market.

The study's shortcomings are acknowledged in the chapter, including the possibility of participant rating bias and the effect of the COVID-19 pandemic on the Co-operative Education program and the experiences of alumni. In general, the introductory chapter establishes the framework for the research and gives readers a preview of the contents of the following chapters. The review of the literature is presented in the upcoming chapter.

CHAPTER TWO

THE LITERATURE REVIEW

2.1 Introduction

The definitions of Co-operative Education, Work-integrated Learning, DUT Strategy Envision 2030, the South African Council on Higher Education, the South African Skills Development Act of 1998 (Republic of South Africa, 1998), the South African Qualifications Authority, and the National Skills Development Strategy are used in the literature review to examine the research's main themes.

2.2. The theoretical structure

A conceptual framework, according to Varpio, Paradis, Uijtdehaage, and Young (2020), is a written or visual representation of a researcher's understanding of the relationships between various concepts, variables, and ideas in a research project.

According to Smith (2018), the implementation of WIL is shaped by both requirements and benefits. WIL programs generally pursue two complementary agendas: “learning to work” and “working to learn.” These agendas are not inherently in conflict; rather, it is important to balance their differing priorities. While organizations and industries provide WIL opportunities to prepare students for the workforce after graduation, higher education institutions encourage students to participate in work and community service as a means of learning. These dual perspectives have the potential to create tension.

When university and workplace objectives are aligned, a complex environment emerges, linking the development of graduate skills, student learning, employee capability, career progression, and workplace structure. This alignment challenges the conventional institutional and organizational norms of learning and work (Smith, 2018). Focusing solely on one driving factor can negatively impact curriculum design, administration, and the allocation of resources.

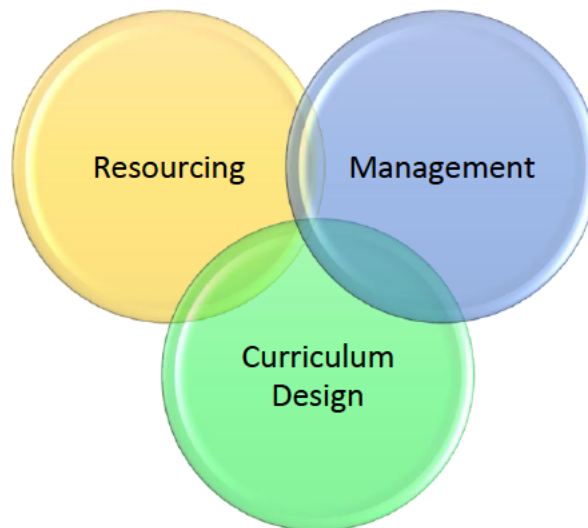


Figure 1: Outlining important components for putting work-integrated learning into practice (Smith, 2018)

Drivers include:

2.2.1 Professional accreditation and WIL policy:

WIL associated with learning outcomes must meet a curriculum requirement of three to six months at DUT, coordinated with a specialist certifying authority (Jackson and Wilton, 2016; Bowering, Frigault, and Yue, 2020). Professional accreditation and WIL policies are essential components of the curriculum, ensuring students receive practical, hands-on experience in their chosen fields and meet the requirements of professional accrediting bodies (Dorasamy and Rampersad, 2018). To align with these standards, DUT has established a policy mandating a period of 3 to 6 months for WIL experiences, coordinated with professional accrediting bodies and integrated into the curriculum (Agwa-Ejon and Pradhan, 2017). The inclusion of a dedicated period for WIL experiences reflects DUT's commitment to providing students with comprehensive educational opportunities, preparing them for successful careers in their respective fields. By partnering with professional accrediting bodies, DUT ensures that WIL experiences align with industry standards, regulations, and best practices, thereby enhancing graduates' employability and professional readiness (Jackson, 2016; Zehr and Korte, 2020).

During the designated period for WIL, students engage in immersive, real-world experiences within professional settings relevant to their disciplines. These carefully crafted experiences help students apply theoretical knowledge, hone practical skills, and meet the learning objectives specified by DUT and the accrediting organizations (Varpio, Paradis, Uijtdehaage, and Young, 2020; Spanjaard, Hall, and Stegemann, 2018). Through supervised placements, internships, or projects, students gain invaluable insights into industry practices, workplace dynamics, and professional expectations, preparing them for the realities of their chosen professions (McMurray, McQuaid, and Richard, 2016). The integration of WIL experiences into the curriculum ensures that students can contextualize their learning, connect the gap between theory and practice, and develop a holistic understanding of their disciplines (Varpio, Paradis, Uijtdehaage, and Young, 2020). Students gain a more comprehensive skill set and a greater understanding of the subtleties and complexity of their chosen disciplines when they combine classroom learning with practical experience (Dorasamy and Rampersad, 2018).

In addition to meeting accreditation requirements, the WIL policy at DUT acts as a driver for ongoing innovation and progress in teaching and learning practices. By regularly reviewing and updating WIL experiences in collaboration with accrediting bodies and industry partners, DUT ensures that its programs remain relevant, responsive, and aligned with evolving industry trends and demands (Bowering, Frigault, and Yue, 2020; Jackson and Wilton, 2016). The inclusion of a dedicated period for WIL experiences in the curriculum demonstrates DUT's commitment to academic excellence, professional development, and student success. By providing students with opportunities to advance practical experience, achieve learning outcomes, and meet accreditation standards, DUT prepares graduates to excel in their careers and make meaningful contributions to their professions and communities (Agwa-Ejon and Pradhan, 2017; Zehr and Korte, 2020).

2.2.2 Enhancement of learning:

To foster the development of social knowledge, students are given the chance to learn about the world through their field of study, such as environmental management or municipal internships (Kolb, 2015; Eyler and Giles, 1999). Learning enhancement

programs that offer students opportunities to learn about the world in connection with their field are vital components of higher education, fostering interdisciplinary understanding, critical thinking, and social literacy (Bringle and Hatcher, 2009; Celio, Durlak, and Dymnicki, 2011). These programs provide students with immersive experiences outside the classroom, such as parliamentary internships, environmental management projects, community service initiatives, and global study tours, enabling them to apply academic understanding to practical situations and gain a greater comprehension of their discipline's relevance to broader societal issues (Jacoby, 2015).

Municipal internships, for example, offer students first-hand exposure to local service delivery processes, policymaking, and governance structures. By working alongside policymakers, lawmakers, and government officials, students gain insights into the complexities of political decision-making, public administration, and democratic governance (Kolb, 2015). Through research, analysis, and advocacy activities, students develop critical thinking, political acumen, and appreciation for the role of government in addressing societal challenges (Yorio and Ye, 2012). Environmental management projects provide students with opportunities to participate in hands-on conservation efforts, sustainable development initiatives, and environmental policy implementation. By collaborating with environmental organizations, government agencies, and community stakeholders, students learn about ecological systems, resource management, and environmental sustainability practices (Spanjaard, Hall, and Stegemann, 2018). These experiences cultivate environmental stewardship, ethical responsibility, and systems thinking, empowering students to contribute to environmental conservation and address pressing environmental issues.

Community service initiatives allow students to connect with local communities, address social needs, and make meaningful contributions to society. Through service-learning projects or community research, students engage directly with community members to understand their needs, assets, and challenges (Eyler and Giles, 1999; Bringle and Hatcher, 2009). By applying their disciplinary knowledge and skills to community-based projects, students develop empathy, cultural sensitivity, and civic responsibility, fostering social literacy and promoting social justice. Global study tours and international exchange programs offer students the opportunity to broaden their horizons, gain intercultural competence, and appreciate diverse perspectives. By immersing themselves in different cultural, social, and political contexts, students

develop cross-cultural communication skills, global awareness, and a nuanced understanding of global issues (Kolb, 2015; Jacoby, 2015). These experiences cultivate openness, tolerance, and appreciation for cultural diversity, equipping students to thrive in a globalized and interdependent society.

Learning enhancement programs provide students with opportunities to investigate the world in connection with their field and aid in the advancement of societal literacy by fostering interdisciplinary understanding, critical thinking, and engagement with real-world issues. Whether through parliamentary internships, environmental management projects, community service initiatives, or global study tours, these programs empower students to use their expertise to tackle societal challenges, promote social justice, and make meaningful contributions to the world around them. By integrating experiential learning opportunities into the curriculum, universities equip students with the competencies and perspectives to become informed, engaged, and responsible global citizens (Eyler and Giles, 1999; Bringle and Hatcher, 2009; Kolb, 2015).

2.2.3 Choosing, confirming, and developing a career:

To support students' career decisions and improve their comprehension and ability to identify relevant careers, students are exposed to WIL experiences connected to their academic fields (Jackson and Wilton, 2016; McMurray, McQuaid, and Richard, 2016). Higher education's crucial components of profession selection, validation, and development ensure that students have the knowledge, skills, and confidence needed to pursue meaningful and rewarding careers (Bowering, Frigault, and Yue, 2020; Zehr and Korte, 2020). Providing students with early exposure to WIL opportunities closely related to their field of study is an effective approach in this process (Ajjawi, Tai, Huu Nghia, Boud, Johnson, and Patrick, 2020). Early exposure to WIL serves multiple purposes in students' career development journeys. First, it provides the opportunity to confirm career choices by gaining first-hand experience in a real-world work environment. By immersing themselves in industry settings, students can assess whether their interests, skills, and values align with the demands and expectations of their chosen career path (Jackson, 2016; Dorasamy and Rampersad, 2018). This confirmation process is invaluable in helping students make informed choices about

future careers, ensuring alignment with their strengths and aspirations (Ferns, Russell, Kay, and Smith, 2016).

WIL opportunities also help students better understand their subject matter by placing classroom theory in the context of real-world applications. Students gain a deeper appreciation of the relevance and significance of their discipline by applying academic knowledge and skills to authentic challenges (Varpio, Paradis, Uijtdehaage, and Young, 2020). This experiential approach also provides purpose and motivation for students to pursue their academic goals (Jackson and Wilton, 2016). By bridging the gap between academia and industry, early exposure to WIL allows students to find meaning in their studies. Students learn about industry trends, practices, and expectations through working on real projects, interacting with industry professionals, and collaborating with practitioners (Agwa-Ejon and Pradhan, 2017). This experience helps them understand how academic knowledge translates into tangible results and prepares them for opportunities and challenges in the workforce (Bowering, Frigault, and Yue, 2020).

Students in WIL programs acquire valuable experiences, networks, and skills that enhance their career prospects. Through industry partnerships, development of practical skills, and professional feedback, students increase their employability and competitiveness in the labour market. Employers highly value professional skills such as communication, teamwork, problem-solving, and adaptability, all of which can be developed through these experiences (McMurray, McQuaid, and Richard, 2016; Spanjaard, Hall, and Stegemann, 2018). Early exposure to WIL experiences relevant to students' academic fields greatly supports career growth and decision-making. Universities enable students to make informed decisions about their future careers by validating their career choices, deepening their understanding of their discipline, and discovering relevance in their studies. These experiences not only provide practical knowledge and skills but also foster resilience, confidence, and adaptability, equipping students to navigate the modern workforce and pursue meaningful careers (Jackson, 2016; Zehr and Korte, 2020).

2.2.4 Assistance to the Community:

Students are encouraged to participate in service learning, which strengthens their ability to act as responsible citizens (Eyler and Giles, 1999). Higher education benefits from social service and service learning because they encourage students' civic engagement, social responsibility, and community involvement (Bringle and Hatcher, 2009). Initiatives for service learning go beyond the usual classroom setting by giving students the chance to use their academic knowledge and abilities to solve real-world problems and contribute significantly to society (Celio, Durlak, and Dymnicki, 2011). Central to service learning is the notion of reciprocity, where students not only contribute to community projects but also gain valuable insights, experiences, and personal growth in return (Jacoby, 2015). Students who actively participate in service projects gain a greater awareness of society's needs, cultural diversity, and systemic challenges facing communities. Through hands-on experiences, they learn to collaborate with community members, organizations, and stakeholders to identify solutions and effect positive change.

Service learning encourages students to consider their experiences critically, connecting academic theories and concepts to practical applications in real-world contexts. This reflective practice enhances students' analytical skills, empathy, and social consciousness, fostering a sense of civic responsibility and ethical leadership (Yorio and Ye, 2012). As students grapple with complex societal issues, they develop a greater awareness of their roles as responsible citizens and agents of social change. Service learning also promotes the acquisition of critical communication and interpersonal skills with diverse groups and navigating challenging situations. Through teamwork, problem-solving, and effective communication, students learn to build relationships, bridge cultural divides, and advocate for social justice (Bringle and Hatcher, 2009). These skills are invaluable not only in academic and professional settings but also in fostering inclusive communities and promoting social cohesion.

Service learning contributes to the holistic development of students by nurturing their sense of empathy, compassion, and altruism. By engaging directly with individuals and communities, students gain a deeper appreciation for the interconnectedness of humanity and the importance of empathy in addressing social inequalities and injustices. These transformative experiences not only shape students' values and

attitudes but also inspire lifelong commitments to community service and social activism (Eyler and Giles, 1999). Service learning plays a vital role in higher education by empowering students to contribute meaningfully to society while enhancing their capacity to function as responsible citizens. Through hands-on experiences, critical reflection, and collaborative action, students acquire the information, abilities, and mindsets needed to confront current societal concerns and effect constructive social change. Universities foster a culture of civic involvement and social responsibility by including service learning into the curriculum. This helps students become moral leaders and global citizens in a world that is becoming more complex and interdependent (Jacoby, 2015).

2.2.5 Workforce development

Before graduating, students apply and transfer the general skills they have learned into professional settings to become "work-ready" (Jackson, 2016; McMurray, McQuaid, and Richard, 2016). The multidimensional process of workforce development aims to equip students with the abilities, knowledge, and characteristics needed to succeed in the contemporary workplace. A key aspect of this development is the application and transfer of generic capabilities cultivated through academic studies into diverse workplace environments (Bowering, Frigault, and Yue, 2020; Zehr and Korte, 2020). By doing so, students become work-ready upon graduation, capable of navigating the complexities of their chosen fields and contributing effectively to organizational success (Ajjawi, Tai, Huu Nghia, Boud, Johnson, and Patrick, 2020). Generic capabilities, often referred to as transferable or soft skills, are a wide set of competencies that are useful in a variety of sectors and professions. These include computer literacy, problem-solving, critical thinking, teamwork, and communication skills (Dorasamy and Rampersad, 2018; Spanjaard, Hall, and Stegemann, 2018). Throughout their academic journey, students develop and refine these capabilities through coursework, projects, presentations, and collaborative activities (Jackson and Wilton, 2016).

However, the true test of these generic capabilities lies in their application and transferability to novel workplace contexts. Workforce development initiatives provide students with opportunities to bridge the gap between theory and practice by engaging

in real-world scenarios, internships, co-op programs, and industry projects (Agwa-Ejon and Pradhan, 2017; Ferns, Russell, Kay, and Smith, 2016). These experiences permit students to apply academic learning to authentic challenges, collaborate with diverse teams, and adapt to dynamic work environments (Varpio, Paradis, Uijtdehaage, and Young, 2020). The process of transferring generic capabilities into novel workplace contexts involves more than just applying learned knowledge and skills. It requires students to demonstrate adaptability, resilience, and a growth mindset as they encounter unfamiliar situations, work with new technologies, and interact with diverse stakeholders (Jackson, 2016; Dorasamy and Rampersad, 2018). Students gain experiences that enhance their employability while also helping them to understand their strengths, weaknesses, and areas for growth.

In addition to practical experiences, workforce development encompasses mentorship, career counselling, and professional development opportunities that support students' transition into the workforce (McMurray, McQuaid, and Richard, 2016). Mentors and career advisors provide guidance, feedback, and networking opportunities for students to navigate career pathways, set goals, and make informed decisions about their future (Jackson and Wilton, 2016). Universities play a crucial role in fostering a culture of lifelong learning by offering continuing education programs, workshops, and seminars that enable graduates to stay up to date on industry trends, obtain new skills, and pursue further career advancement (Bowering, Frigault, and Yue, 2020). By investing in workforce development initiatives, universities empower students to become adaptable, resilient, and agile professionals capable of thriving in an ever-changing labour market (Ajjawi, Tai, Huu Nghia, Boud, Johnson, and Patrick, 2020; Zehr and Korte, 2020).

Workforce development is an ongoing process that prepares students to apply and transfer their generic capabilities into novel workplace contexts, thereby becoming work-ready upon graduation. Through practical experiences, mentorship, career counselling, and lifelong learning opportunities, students acquire the abilities, knowledge, and qualities required to excel in their chosen industries and contribute significantly to society (Jackson, 2016; Spanjaard, Hall, and Stegemann, 2018).

2.2.6 Transfer of knowledge

Pupils are motivated to investigate, present, and critically evaluate their academic knowledge in the context of everyday employment. The intention is for students to learn and grow alongside colleagues and industry (Jackson and Wilton, 2016; McMurray, McQuaid, and Richard, 2016). One essential component of education that bridges the gap between theoretical understanding and practical application is the transfer of knowledge from the classroom to the workplace (Bowering, Frigault, and Yue, 2020; Dorasamy and Rampersad, 2018). During this process, students are empowered to explore and share the knowledge gained in the classroom within real-world organizational settings. This interaction between academia and industry fosters a symbiotic relationship where both parties stand to benefit significantly (Ajjawi, Tai, Huu Nghia, Boud, Johnson, and Patrick, 2020). Students embarking on this journey of knowledge transfer are encouraged to immerse themselves in workplace environments, applying the concepts, theories, and skills learned in their academic pursuits (Ferns, Russell, Kay, and Smith, 2016; Spanjaard, Hall, and Stegemann, 2018). By engaging in workplace activities, they gain first-hand experience and insights into how theoretical knowledge translates into practical solutions and outcomes. In addition to strengthening their comprehension, this practical approach develops critical thinking and problem-solving abilities necessary for success in the workplace (Varpio, Paradis, Uijtdehaage, and Young, 2020).

Considering what they have learned in class, students are urged to critically reflect on their experiences in the workplace. Through reflective practice, they can evaluate the applicability and efficacy of scholarly theories and methods in practical contexts (Jackson, 2016; Zehr and Korte, 2020). Students gain a greater understanding of the subtleties and complexities of their subject area, which helps them refine their skills and adapt their approaches to meet the demands of the industry successfully (Bowering, Frigault, and Yue, 2020). The goal of knowledge transfer extends beyond individual student learning to encompass broader organizational and institutional change. By actively engaging with students and integrating their insights and experiences, both universities and organizations can evolve and adapt to meet the changing needs of society and the workforce (Agwa-Ejon and Pradhan, 2017; Dorasamy and Rampersad, 2018). This collaborative approach fosters innovation, drives continuous improvement, and helps advance the body of knowledge and

practice in various fields.

The success of knowledge transfer lies in creating a conducive environment that encourages open communication, collaboration, and mutual learning between academia and industry (Jackson and Wilton, 2016; Ferns, Russell, Kay, and Smith, 2016). By facilitating meaningful interactions and partnerships, universities and organizations can harness the collective expertise and creativity of students, faculty, and professionals to address real-world challenges and drive positive change. Through this collaborative effort, the journey of knowledge transfer becomes a transformative experience that benefits individuals, organizations, and society (McMurray, McQuaid, and Richard, 2016; Ajjawi, Tai, Huu Nghia, Boud, Johnson, and Patrick, 2020).

2.2.7 Strengthening of ties between academia and business

Bringing together academic researchers and industry professionals facilitates the exchange of knowledge, expertise, and resources that address pressing challenges, develop innovative solutions, and drive technological advancements (Ferns, Russell, Kay, and Smith, 2016; Jackson and Wilton, 2016). A much wider agenda that includes collaborative research, consultancies, continuing professional development for industry-based staff, industry internships for researchers, and curriculum progress and innovation encompasses student work-integrated learning experiences (Agwa-Ejon and Pradhan, 2017; Dorasamy and Rampersad, 2018). Improving university-industry collaborations is essential for innovation, economic growth, and equipping students for successful careers in the rapidly changing modern workforce (Bowering, Frigault, and Yue, 2020; Zehr and Korte, 2020). A major element of this larger objective is work-integrated learning experiences, which provide students with valuable opportunities to apply theoretical knowledge in practical contexts and serve as a catalyst for collaborative research, consultancies, and curriculum development (Jackson, 2016; Spanjaard, Hall, and Stegemann, 2018).

WIL encompasses a spectrum of experiences, including internships, co-op programs, practicums, and industry projects, where students engage directly with industry partners to tackle real-world challenges. These experiences enhance students' academic understanding while also providing practical skills, industry insights, and professional networks crucial for success in their chosen fields (McMurray, McQuaid, and Richard, 2016). In addition to WIL, collaborative research initiatives play a significant role in

strengthening university-industry partnerships. Such projects provide excellent opportunities for students to participate in cutting-edge research, gain practical experience, and contribute to meaningful discoveries (Ferns, Russell, Kay, and Smith, 2016; Dorasamy and Rampersad, 2018). Universities and industry partners often collaborate on consultancies and continuing professional development programs to address specific industry needs, enhance employee skills, and foster lifelong learning among industry-based staff (Bowering, Frigault, and Yue, 2020). These programs may involve customized training workshops, seminars, and certificate programs designed to upskill employees and keep them current with the latest developments in their fields (Jackson and Wilton, 2016).

Another important aspect of university-industry partnerships is industry placements for academics, where faculty spend time in industry settings to gain firsthand experience, establish connections, and enrich their teaching and research activities (Agwa-Ejon and Pradhan, 2017; Zehr and Korte, 2020). These placements enable academics to stay up to date with industry trends, bring real-world insights into the classroom, and foster collaborations with industry partners (Ferns, Russell, Kay, and Smith, 2016). Shared curriculum development and innovation initiatives ensure that academic programs remain relevant and responsive to industry needs. By co-designing curricula, developing industry-relevant learning resources, and integrating emerging technologies and practices into academic programs, universities and industry partners equip students with the knowledge, skills, and competencies required to thrive in today's dynamic job market (Dorasamy and Rampersad, 2018; Jackson, 2016).

Enhancing university-industry partnerships through work-integrated learning, collaborative research, consultancies, professional development programs, industry placements for researchers, and shared curriculum initiatives is essential for driving innovation, promoting economic growth, and preparing students for 21st-century careers. By leveraging the collective expertise, resources, and networks of academia and industry, these partnerships create mutually beneficial opportunities that advance knowledge, enhance workforce capabilities, and address societal challenges (Spanjaard, Hall, and Stegemann, 2018).

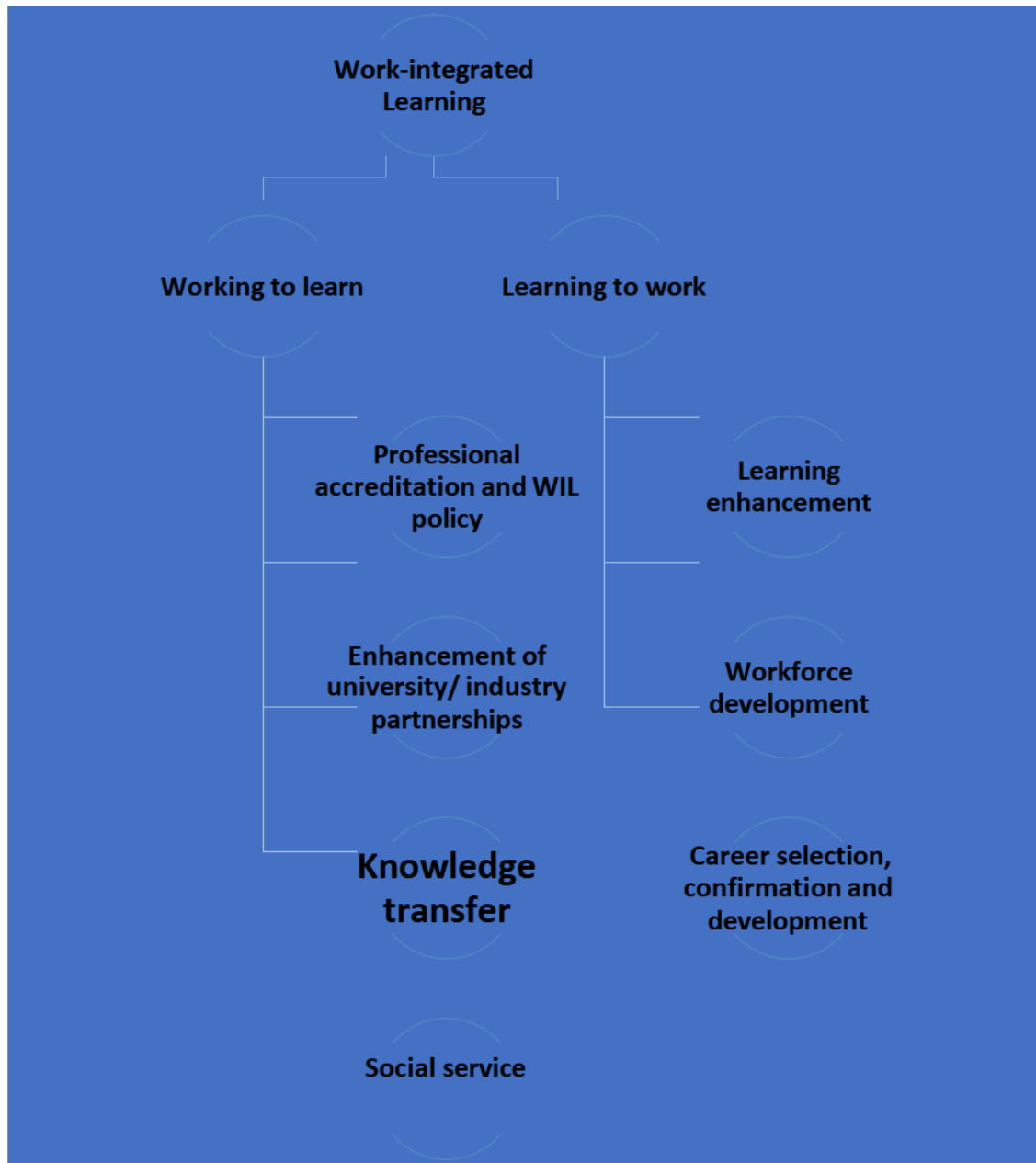


Figure 2: The factors that motivate the use of work-integrated learning (Smith, 2018)

The goal of the statement is to improve students' learning experiences by outlining a policy for WIL and preparing them for successful careers in their chosen fields. Key elements of the policy include a required period of 3 to 6 months of WIL with a professional accrediting body, early exposure to WIL experiences related to students' fields of study, and an emphasis on learning enhancement, social service, workforce development, knowledge transfer, and university/industry partnerships. Overall, the policy highlights the importance of practical knowledge in students' selected fields and

collaboration between universities and industries to support student learning and career development.

2.3. Co-operative Education

Wanotayapitak, Saraubon, and Nilsook (2019) define Co-operative education as an educational program that works with undergraduates or students who are required to work full-time and is related to the core curriculum. Students have the option to incorporate their work into their academic experience through the co-operative education program. Coops are partnerships between a university and business that aim to give students real-world job experience by alternating between full-time work and full-time study (Main, Johnson, and Wang, 2019). Consequently, co-operative education is an organized method of instruction that combines classroom instruction with real-world business experience in connection to students' academic goals and offers a better way for them to apply theory to practice. According to Jackson and Wilton (2017), the goal of WIL is "to develop a coherent approach to build workforce capability, skills, and individual prospects." It is becoming more widely accepted as an important way to produce knowledgeable and competent graduates ready to function well in the workforce. Understudies can gain insight into the actual components of their chosen careers through WIL (Jackson and Wilton, 2017).

Work-integrated learning is seen as a valuable tool for enhancing the employability, learning, and career aspirations of undergraduate students by providing them with skills, information, and traits that are valuable to employers. According to Pertanika and Hum (2017), WIL is a collection of methods and techniques that combine theory and practice inside of a curriculum that has been carefully thought out. WIL is a course that incorporates real-world experience from the workplace. A variety of activities are included in WIL programs, including international work exchanges, networking events, industry conferences, volunteerism, community service, work experience, internships, and placements; mentoring; and participation in extracurricular activities (Jackson and Wilton, 2016). WIL is thought to be a crucial tool for helping DUTs develop professional abilities, traits, and information that can improve their employability, learning, and career aspirations.

Pertanika and Hum (2017) define WIL as a set of methods and techniques that combine theory and practice inside a curriculum that is intentionally created. WIL is included in a curriculum that incorporates workplace experience. WIL programs include a range of activities, including participating in extracurricular activities, networking events, industry conferences, international work exchanges, professional association membership or engagement, work experience, internships, or placements, mentoring, and volunteering (Jackson and Wilton, 2016).

An undergraduate work placement gives students the chance to hone their professional skills—which may have been started in an earlier course of study—and put them to use in the workplace. Therefore, it stands to reason that graduates who participated in a work placement would indicate that their undergraduate education had a bigger impact on their ability to gain new abilities (Wilton, 2016).

2.3.1. Types of Work-Integrated Learning

According to the Higher Education Monitor 12 (Council on Higher Education, 2011), there are four types of WIL. As indicated in the Figure 3.

These are:

- Work-directed theoretical learning (WDTL) conveys theory and practice together meaningfully. This type of WIL includes inviting guest lectures from the industry or professional practice into the lecture halls.
- Using real-world scenarios in place of assignments, projects, and other problem-based activities is known as problem-based learning or PBL. This kind of WIL helps students build their capacity for independent study, collaborative problem-solving, and effective and efficient problem-solving.
- Project-based learning (PJBL) involves real research-based projects positioned in the workplace. These projects require students to develop and apply critical skills and knowledge to solve problems. Such projects are supervised by both university and workplace supervisors or tutors.
- Workplace learning (WPL) involves placing students in a workplace setting for learning. Students are involved in planning and implementing tasks, reflecting on and evaluating the task, and changing for future action. This type of WIL aligns workplace and academic practices.

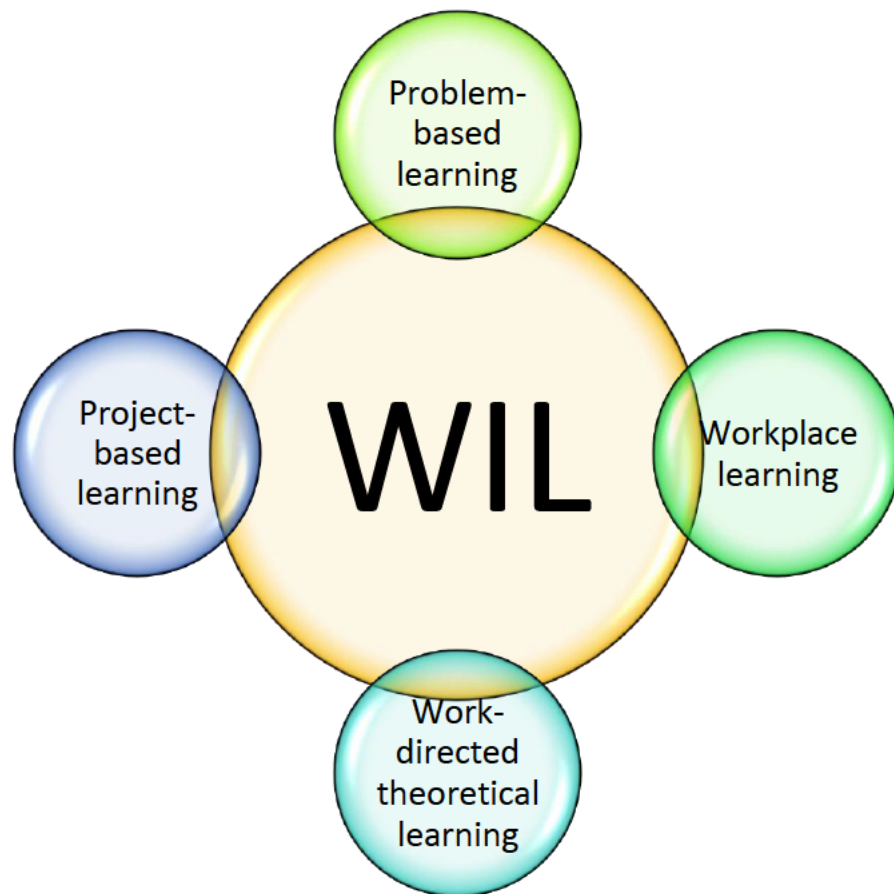


Figure 3: Showing four types of WIL (adapted from the Higher Education Monitor 12 (Council on Higher Education, 2011)).

The most suitable WIL experience for a student depends on their individual interests, goals, and field of study. Students should carefully consider the available options, as different WIL opportunities offer distinct benefits. WIL provides practical, real-world experience in a student's chosen industry, which is essential for developing professional skills. By engaging with experienced practitioners, students can enhance their networks, gain valuable industry knowledge, and build skills that improve their employability (Council on Higher Education, 2011). WIL can also assist students in developing a better awareness of the work environment they will be entering after graduation and in making more informed decisions regarding their future employment. In general, WIL is a useful method to help students get ready for the challenges of the job and bridge the knowledge gap between theory and practice.

According to Smith, (2014), there are typically four main goals for WIL:



Figure 4: Four main WIL goals (Smith, 2014)

Work-integrated learning offers an inclusive, practical placement within a workplace setting that is related to a defined career field. WIL also allows DUT students to advance confidence, develop skills for the industry and have an opportunity to apply theory into practice. WIL can be essential in developing students' professional identity, advancing students' theoretical knowledge and transferable skills, helping students to communicate effectively with people in various roles and aiding students to participate in teamwork, problem posing and solving, and self-management.

The four main goals of WIL are (i) to enhance students' learning, (ii) prepare students for the workplace, (iii) increase students' employability, and (iv) support economic development. Through WIL, students can gain practical, practical experience in their chosen field, develop important professional skills, and increase their probability of finding meaningful employment after completing the qualification.

2.3.2. The World Association for Cooperative Education

Founded in 1979, the World Association for Cooperative Education (WACE) became an official organization in 1983. According to the World Association for Cooperative Education (WACE, 2021), WACE oversees developing, putting into action, and upholding events, programs, and services that are geared toward the growth and support of the network of global industry and institutional partners as well as the whole Co-operative and Work-Integrated Education (CWIE) community. The only global professional organization dedicated to creating, enhancing, promoting, and rebranding cooperative and work-integrated education initiatives in business and higher education is the World Association for Cooperative Education (WACE). Cooperative education is defined by the World Association for Co-operative Education (WACE) as work-integrated learning, which combines classroom and workplace learning. The learner then brings this workforce learning back into the classroom for additional analysis and reflection.

As part of its mission statement, the World Association for Co-operative Education (WACE) works to enhance the relationship between education and work. Cooperative and Work-Integrated Education (CWIE) is a term coined by WACE to recognize and embrace all forms of experiential learning used by business and higher education institutions to train the next generation of global specialists. CWIE refers to co-operative education, internships, industry placements, international work exchanges, study abroad, research, clinical rotations, service learning, and community service (WACE, 2021).

2.3.3. Southern African Society for Co-operative Education (SASCE)

The Southern African Society for Co-operative Education (SASCE) is a non-profit organization that promotes the integration of academic learning with quality Work-Integrated Learning (SASCE, 2021). The success of cooperative education is that students graduate with the competitive advantage of entering the workforce with employability skills and job experience relevant to their qualifications. DUT is a corporate member of the SASCE (SASCE, 2021).

Membership benefits include lower rates for SASCE conferences and symposiums.

- Share success stories, difficulties, and best practices in Co-operative Education.

- Connect with Co-operative Education specialists to explore potential partnerships between institutions and industry.
- The platform brings together government, industry, institutions, and students to discuss cooperative education.

The SASCE has a significant impact on DUT graduates' professional skills and employability. SASCE promotes the integration of academic studies with quality WIL, resulting in graduates who are well-prepared to enter the workforce with relevant skills and experience connected to their qualification fields.

One important aspect of SASCE at DUT is its emphasis on bridging the gap between theory and practice through WIL activities. SASCE allows DUT graduates to apply theoretical knowledge in practical situations. They get hands-on experience in their respective professions by providing chances for students to participate in real-world work experiences such as internships, placements, and industry projects. This practical experience not only improves students' comprehension of their studies, but also provides them with vital skills, competencies, and professional networks that employers value.

SASCE's emphasis on quality WIL experiences guarantees that DUT graduates have the requisite employability skills to succeed in a competitive work market. SASCE-coordinated WIL programs provide students with opportunities to develop vital skills such as communication, teamwork, problem-solving, adaptability, and critical thinking, all of which are highly appreciated by employers in a variety of industries. By obtaining practical experience and honing these skills, DUT graduates are better prepared to meet workplace demands and contribute effectively to their chosen professions.

SASCE facilitates collaboration and partnership among DUT, industry partners, and other stakeholders, promoting mutually beneficial connections that improve the quality and relevance of WIL experiences. SASCE enhances the linkages between academia and industry by fostering dialogue, knowledge sharing, and best practices in WIL, ensuring that DUT's WIL programs are in line with industry demands, standards, and trends. This relationship not only improves the employability of DUT graduates, but also fosters innovation, industry-relevant research, and regional economic development.

SASCE's role in encouraging the merging of academic studies and excellent WIL experiences is extremely important for DUT graduates' professional development. SASCE supports the overall development of DUT graduates by offering chances for practical learning, strengthening employability skills, and facilitating collaboration between academics and industry.

2.4. Case-specific information about DUT Strategy; ENVISION2030

The Durban University of Technology Strategy, ENVISION2030 is a roadmap for the future of the university. The strategy outlines DUT's mission, vision, and values, as well as its goals and objectives for the next decade. The overall aim of the strategy is to position DUT as a leading university of technology in Africa, known for its innovative, relevant, and sustainable academic programmes.

In terms of real-world professional skills, DUT's ENVISION 2030 strategy underlines the relevance of WIL in preparing students for the needs of today's workforce. Specifically, the policy asks for the creation of creative WIL programs that give students hands-on experience and help them build professional networks. The strategy also emphasizes the value of entrepreneurship, leadership, and digital skills in today's fast-changing work environment. The Envision 2030 strategy emphasizes the necessity of providing DUT students with a high-quality education that qualifies them to face the difficulties of the modern workplace.

Through the development of innovative WIL programs and the integration of key professional skills into the curriculum, DUT works to guarantee that its graduates are prepared with the skills and information required to excel in the actual world of work. DUT prepares progressing adaptive graduates who are innovative and creative thinkers and who can use their knowledge and skills to solve workplace problems facing our country (ENVISION 2030). The institution has come up with a new philosophy of teaching and learning that makes graduates innovative and entrepreneurial. ENVISION 2030 indicates that by 2030 the University aims to have graduates who are entrepreneurial, innovative, creative, and adaptive to the changes of the world. These graduates participate productively in the development of the region, country, and the world.

2.4.1. DUT WIL Policy

The goal of DUT's WIL policy is to enable the implementation of consistent high-quality Experiential Learning techniques and procedures for DUT students. The goal of a WIL policy is to provide students with experience learning opportunities at a higher education institution such as DUT. WIL is a type of learning that combines theoretical knowledge acquired in the classroom with practical experience gained in real-world situations (DUT, 2023). The WIL policy is to facilitate the acquisition of the information, skills, and competencies required for students to succeed in their chosen occupations. It establishes a framework for creating, implementing, and assessing experiential learning options such as internships, cooperative education programs, and service learning. The purpose of DUT's WIL policy is to enable consistent, high-quality Experiential Learning approaches and procedures for DUT students. A WIL policy's purpose is to provide students with experiential learning opportunities at a higher education institution like DUT. WIL is a method of learning that blends theoretical classroom knowledge with hands-on experience in real-world scenarios. The WIL policy aims to help students acquire the knowledge, skills, and competencies they need to succeed in their chosen jobs. It provides a framework for developing, executing, and evaluating experiential learning opportunities such as internships, cooperative education programs, and service learning (DUT, 2023).

The three main objectives to be achieved by DUT WIL policy are:

- The inclusion of formal credits bearing WIL in approved academic programs offered by the DUT.
- To confirm responsiveness to national industry and community needs.
- To develop students' skills by integrating and applying information, skills, and values in a reliable setting (Van Niekerk, 2018).

2.4.2 The DUT WIL policy provides clearly defined responsibilities to Co-op members which are to:

- Facilitate student Placement and workplace approval.
- develop learner guides and mentoring procedures.

- plan assessment practices that are aligned with the related DUT policies and procedures.
- create partnerships for experiential learning, partnerships between the DUT, the private and public sectors, and communities.
- develop an employer training programme for workplace mentors to meet DUT learning outcomes of the work-integrated module.
- have safety and risk management strategies for students in the workplace.
- develop a work-preparedness program for DUT students (Van Niekerk, 2018).

The DUT WIL policy outlines the responsibilities of Co-op members in providing work-integrated learning experiences for students. These responsibilities include facilitating student placement and workplace approval. The development of learner guides, and mentoring procedures, planning assessment practices in alignment with DUT policies, creating partnerships for experiential learning, developing an employer training program for workplace mentors, and having a safety and risk management strategy for students in the workplace is also important. The Co-op members are also responsible for developing a work-preparedness program for DUT students. These measures ensure that DUT students gain the necessary professional skills required for the competitive workplace and are well-prepared to enter it.

2.4.3 Key attributes of DUT Work integrated learning and outcomes.

The key characteristics identified in the literature on Co-operative Education and WIL programs, as outlined by the Association for Co-operative Education and WIL (Johnson, Smith, and Lee, 2016), are based on experiential learning principles established by prominent scholars such as Dewey (1938), Kolb (1984), Moon (2004), and Schön (1983), as well as the South African Qualifications Authority (SAQA, 1995).

These attributes encompass various dimensions of quality experiential programs, including but not limited to:

- **Integration of Theory and Practice:** Effective Co-operative Education and WIL programs smoothly combine classroom learning with real-world experiences, allowing students to apply theoretical knowledge to practical settings and vice versa.

- **Reflection and Critical Thinking:** Encouraging reflection on experiential learning activities enables students to critically assess their experiences, derive valuable insights, and apply them to future circumstances fostering deeper learning and personal growth.
- **Active Engagement and Participation:** Quality experiential programs prioritize active engagement and hands-on participation, providing students with opportunities to actively explore, experiment, and interact within authentic contexts relevant to their field of study.
- **Guidance and Mentorship:** Providing structured guidance and mentorship throughout the experiential learning process is essential for supporting students' development, offering feedback, and facilitating their transition from theory to practice.
- **Assessment and Feedback:** Effective assessment strategies in Co-operative Education and WIL programs focus on evaluating students' performance in authentic contexts, providing timely feedback, and fostering continuous improvement and skill development.
- **Collaboration and Interdisciplinary Learning:** Encouraging collaboration among students, educators, employers, and other stakeholders promotes interdisciplinary learning, teamwork, and the exchange of diverse perspectives, enriching the overall learning experience.
- **Ethical and Professional Conduct:** Emphasizing ethical and professional conduct is integral to Co-operative Education and WIL programs, instilling values of integrity, responsibility, and ethical decision-making in students as they navigate professional settings.
- **Flexibility and Adaptability:** Recognizing the dynamic nature of experiential learning, quality programs offer flexibility to accommodate diverse student needs, learning styles, and evolving industry trends, ensuring relevance and effectiveness.
- **Continuous Improvement and Innovation:** Quality experiential programs are committed to ongoing evaluation, reflection, and innovation, seeking to enhance programmatic effectiveness, address emerging challenges, and capitalize on new opportunities for learning and growth.

By incorporating these fundamental characteristics into Co-operative Education and WIL programs, educational institutions provide meaningful learning experiences that prepare students for success in the workforce while also achieving the larger goals of education, professional development, and societal impact.

2.4.4. The main features of Work-Integrated Learning (WIL) include:

- Integration of theory and practice: WIL at DUT aims to integrate theoretical knowledge with practical experience gained in real-world settings. This integration helps students to develop a deep understanding of their subject matter, skills and competencies required in their chosen careers.
- Industry partnerships: DUT has formed collaborations with a diverse spectrum of industry partners from many sectors to give students real-world work experience. These collaborations allow students to engage in real-world projects, learn from seasoned professionals, and establish networks that will benefit them in their future professions.
- Student-centred approach: WIL at DUT is designed to be student-centred, with attention developing students' skills, knowledge, and competencies. Students are provided with opportunities to reflect on their learning, receive feedback on their performance, and develop their own learning goals.
- Supportive environment: DUT provides a supportive environment for students participating in WIL programs. Students are provided with guidance and support throughout their work experience, including pre-placement preparation, ongoing mentoring, and post-placement debriefing.

WIL characteristics, such as the integration of theory and practice, industry relationships, a student-centred approach, and a supportive environment, are critical in professional development. WIL gives students practical job experience that helps them improve their theoretical knowledge and practical abilities, making them more marketable. WIL exposes students to real-world work situations and teaches them from seasoned professionals, allowing them to develop important skills such as problem-solving, communication, and teamwork. Furthermore, WIL offers students networking opportunities and exposure to other work cultures, which helps them grasp the requirements and expectations of various businesses. Overall, the attributes of WIL at

DUT provide a platform for developing the professional skills necessary for students to excel in their chosen careers, contributing to their personal and professional growth.

2.4.5 The outcomes of Work Integrated Learning (WIL) at DUT include:

- Enhanced employability: WIL programs at DUT help students develop their skills, knowledge, and competencies required for their chosen careers, making them more attractive to potential employers (DUT, 2021; Smith, 2014).
- Improved academic performance: Research has shown that students who participate in WIL programs perform better academically than those who do not. This is because WIL provides students with practical examples of how the theoretical concepts they learn in the classroom are applied in real-world settings (Jackson and Wilton, 2017; Smith, 2014).
- Networking opportunities: WIL programs at DUT provide students with opportunities to build networks with industry professionals, helping them secure employment after graduation (SASCE, 2021; WACE, 2021).
- Personal development: WIL programs at DUT help students develop their interpersonal skills, such as communication, teamwork, and problem-solving, which are essential in the workplace (Kolb, 1984; Van Niekerk, 2018).
- Contribution to the community: WIL programs at DUT provide students with opportunities to contribute to their local communities by working on projects that have a positive impact on society (SASCE, 2021).

Work Integrated Learning outcomes are important for graduates of DUT because they provide practical experience and industry-tested skills that are required in the workforce (DUT, 2021). WIL outcomes help graduates to become more employable and enhance their academic performance (Jackson and Wilton, 2017). It also provides industry connections and networking opportunities that can help graduates to secure employment after graduation (WACE, 2021). Additionally, WIL contributes to the Cooperative Education (CO-OP) program, which allows students to earn academic credit while gaining practical experience in their field of study (SASCE, 2021). The skills developed through WIL, including teamwork, communication, problem-solving,

and critical thinking, are highly valued by employers and can help DUT graduates stand out in the job market (Kolb, 1984; Van Niekerk, 2018). Overall, WIL has a positive impact on DUT graduates, contributing to their development and success in their future careers.

Table 2.1 Attributes and Outcomes of Work-Integrated Learning (Ngubane, 2022)

Experience	Curriculum	Student Outcomes	Reflection
Has direct learner involvement (is hands-on and learner's choice)	Learning outcomes are articulated and measured	Skills, knowledge & understanding is developed	Is ongoing and meaningful: In and on practice and projected forward to future practice
Is meaningful & substantial (not just watching has an impact)	Outcomes and assessment are aligned	Attitudes, values and beliefs are challenged	Is critical vs descriptive
Is situated/authentic (Ideally in a place where learning is to be used)	Experiential and academic learning is connected to, and by, the learner	The learner contributes to the learning environment and the curriculum	Is socially mediated, supported, and assessed
Embraces disruptive moments and supports personal exploration of one's beliefs and values		New meaning is constructed by connecting previous and new learning	

WIL has been identified as a learning strategy for reducing the skills gap in graduates. However, WIL programmes are insufficient to provide graduates with employment skills. It is thus critical to assess the impact of a WIL programme on graduate employability.

2.5. Durban University of Technology Living Values.

Durban University of Technology (DUT) is committed to instilling living values in its students, which serve as foundational principles guiding their personal and professional development (DUT, 2021). These living values encompass a range of ethical, social, and professional attributes essential for success in the workplace and beyond. By integrating these values into its educational programs and campus culture, DUT prepares students to meet the skills requirements of the workplace and become valuable assets to prospective employers (DUT, 2021; Jackson and Wilton, 2017). One of the key living values emphasized at DUT is integrity. It encompasses honesty, ethical behaviour, and a strong sense of responsibility towards oneself and others. Students are encouraged to uphold high ethical standards, demonstrating integrity in their academic work, interactions with peers and faculty, and future professional roles. By cultivating a culture of integrity, DUT equips students with the moral compass and ethical decision-making skills needed to navigate complex workplace environments and build trust with colleagues, clients, and stakeholders (DUT, 2021; Treviño, den Nieuwenboer, and Kish-Gephart, 2014).

Another vital living value promoted at DUT is excellence. Excellence entails a commitment to continuous improvement, innovation, and the pursuit of high standards of performance in all aspects of one's academic and professional life (DUT, 2021). Students are challenged to strive for excellence in their studies, extracurricular activities, and personal growth endeavours, pushing themselves beyond their comfort zones to achieve their full potential. Through rigorous academic programs, hands-on learning experiences, and opportunities for personal development, DUT empowers students to develop the skills, resilience, and determination required to excel in the workplace and make meaningful contributions to their fields (DUT, 2021). Collaboration is also a fundamental living value at DUT, emphasizing the importance of teamwork, communication, and cooperation in achieving common goals (DUT, 2021). Students are encouraged to collaborate with their peers, faculty, and external partners on group projects, research initiatives, and community engagement activities. By working collaboratively, students learn to leverage their diverse skills and perspectives, resolve conflicts, and professionally achieve shared objectives. This emphasis on collaboration prepares students to thrive in collaborative work

environments, where effective teamwork and interpersonal skills are highly valued by employers (Jackson and Wilton, 2017; Smith, 2014).

DUT promotes inclusivity and diversity as core living values, fostering a culture of respect, tolerance, and acceptance of individuals from diverse backgrounds and perspectives (DUT, 2021). Students are encouraged to embrace diversity, challenge stereotypes, and create inclusive spaces where everyone feels valued and empowered to contribute. Through exposure to diverse perspectives, cultures, and experiences, students develop empathy, cultural competence, and a global mindset, preparing them to work effectively in multicultural environments and engage with diverse stakeholders in the workplace (Knight, 2012). The living values promoted at DUT play a crucial role in shaping students' skills development and preparing them for employment in the modern workforce. By instilling values such as integrity, excellence, collaboration, inclusivity, and diversity, DUT equips students with the ethical, social, and professional competencies needed to succeed in their chosen careers and make positive contributions to society. As graduates, DUT students are well-positioned to meet the skills requirements of the workplace, adapt to changing industry demands, and become ethical leaders and global citizens in their respective fields (DUT, 2021; WACE, 2021).

2.6. The value of WIL in new professional recruitment

According to Ngwane (2019), the work-integrated learning programme supports businesses' human resource strategies by categorizing and developing future staff. New professional recruitment requires good strategic planning. According to John (2019), recruitment is a process that provides the firm with a pool of qualified job candidates from whom to choose. The recruitment process is an important aspect of human resource management. Before recruiting, organizations must establish appropriate staffing methods and projections to determine the number of people required. The prediction will be based on the organization's annual budget as well as its short- to long-term strategic plans. According to Burns (2021), WIL initiatives are cost-effective in terms of employing eager new employees, screening students for permanent employment, bringing new expertise into the business, and assisting the corporation in meeting affirmative action goals. According to Burns (2021), co-op students typically stay with their employers for longer periods and advance faster than other employees. WIL initiatives were seen as effective recruitment strategies.

Work-integrated learning initiatives, such as cooperative education, can help organizations improve their human resource strategies by identifying and developing prospective employees. These programs give students with real work experience and professional skills, preparing them to meet the demands of the workforce. As a result, employers can hire graduates who already have the necessary skills and expertise for the job, saving time and resources for training. Employers' human resource strategies rely heavily on recruitment. According to John (2019), recruiting is the process of providing firms with a pool of qualified job candidates from which to select. Employers can generate a pipeline of skilled workers by adding work-integrated learning programs into their recruitment strategy from the beginning.

Strategic planning is also an important part of recruitment. Employers must evaluate their present and future workforce needs and create a plan to meet them. Work-integrated learning programs can be a useful component of this strategy because they enable companies to identify and develop the skills and knowledge required in their future workforce.

Employers' human resource strategies might benefit from work-integrated learning programs, which provide a pipeline of skilled employees. Employers who incorporate these programs into their recruitment and strategic planning can identify and develop the skills and knowledge required in their future workforce, minimizing training time and resources while boosting overall workforce quality.

2.7. The legislative framework on professional skills development

The following literature examines the legislative framework in South Africa, emphasizing the relevance of professional skill development for higher education and workplace training. The Higher Education Act No. 101 of 1997 (Republic of South Africa, 1997) establishes and governs universities and other higher education institutions in South Africa, with an emphasis on quality assurance, transformation, and the development of high-level skills in the country. The Skills Development Act No. 97 of 1998 aims to encourage skill development in the country by outlining a framework for developing and implementing workplace training programs. The Skills Development Levies Act (SDLA) of 1999 mandates that businesses contribute to the Skills Development Fund, which is intended to promote workplace training and skill development activities. The South African Qualifications Authority Act (SAQA) of

1995 created the South African Qualifications Authority, which oversees developing and managing the National Qualifications Framework (NQF) Act (Republic of South Africa, 1998), which establishes the country's educational and training standards. The legislative framework seeks to alleviate skill shortages and improve the quality of higher education and workplace training in South Africa. It also stimulates the development of skills appropriate to labour market needs, which aids in economic growth and job creation. The legislative framework also highlights the necessity of accreditation and quality assurance in higher education and workplace training, ensuring that individuals' abilities and certifications are recognized and valued by employers. The legislative framework also supports collaboration among employers, the government, and educational institutions in the formulation and execution of workplace training programs, which promotes training alignment with industry demands and increases graduates' employability.

2.7.1 The South African Council on Higher Education (CHE)

The South African Council on Higher Education (CHE) is an independent statutory body recognized under the Higher Education Act (Republic of South Africa, 1997) and later as the Quality Council for Higher Education under the National Qualifications Framework Act (Republic of South Africa, 1998). Its mandate is to advise the Minister of Higher Education and Training on all higher education issues, and it oversees quality assurance and promotion through the Higher Education Quality Committee.

According to the Council for Higher Education (CHE, 2011), WIL provides certain benefits to student education. One of the most notable advantages of work-integrated learning is the improvement of academic achievement that stimulates critical thinking and increases students' enthusiasm to learn. WIL increases students' value by improving their communication, leadership, and association abilities, as well as fostering effective student teamwork (CHE, 2011).

WIL also assists students in clarifying their career choices and professional identities, facilitating employment prospects, and providing students with excellent work ethics. WIL helps students develop technical knowledge and abilities (CHE, 2011). The CHE has highlighted numerous advantages of WIL for student learning. Other advantages of WIL include the ability to boost academic achievement by stimulating

critical thinking and motivating pupils to study, both of which are highly appreciated in the profession.

2.7.2. South African Skills Development Act of 1998 (Republic of South Africa, 1998)

The Skills Development Act is the first policy to address skills development in South Africa. The South African Skills Development Act (SDA) of 1998 (Republic of South Africa, 1998) aims to establish an institutional framework for both the public and commercial sectors. Workplace initiatives for developing and improving the abilities of South African workers.

These workplace approaches should be incorporated into the National Qualification Framework (NQF) of the South African Qualifications Authority (SAQA) Act of 1998 (Republic of South Africa, 1995) to provide leadership that leads to recognized occupational qualifications. Section 2(1) (a) of the SDA declares that its objective is to improve the quality of life of South African workers, their view of work, labour mobility, competitiveness, workplace productivity, and service delivery.

The Sector Education and Training Authorities (SETAs) are mechanisms formed to ensure that the SDA achieves its goals of upgrading the skills of South African workers. Skills Development Facilitators play an important role in the implementation of the SDA because they are responsible for analysing the workplace's skill needs as well as creating and accurately administering the skill plan.

The South African Skills Development Act (SDA) of 1998 (Republic of South Africa, 1998) and Co-operative Education (Co-op) programs play a significant role in developing professional skills in students who come from the world of work. The SDA provides an institutional framework for the implementation of workplace strategies to develop and enhance the skills of the South African workforce. Through the establishment of SETAs, the SDA promotes skills development in specific sectors of the economy, including those relevant to Co-operative Education. DUT Co-op on the other hand, provides students with practical work experience and the opportunity to develop skills that are highly valued in the workplace. Co-op programs offer students the chance to apply academic knowledge in a real-world setting, develop practical

skills, and build professional networks. By participating in Co-op programs, students can enhance their employability and improve their career prospects after graduation.

The combination of the SDA and Co-op programs provide students with a comprehensive skills development pathway, linking academic learning with real-world work experiences. This helps bridge the skills gap in the job market and improve the competitiveness of the South African workforce. Ultimately, the SDA and Co-op programs can play a critical role in developing the professional skills of South African students and addressing the skills shortages in key sectors of the economy.

2.7.3. The Skills Development Levies Amendment Act 24 of 2010 (Republic of South Africa, 2010)

The Skills Development Levies Amendment Act 24 of 2010 is a South African legislative instrument that amends the Skills Development Levies Act 9 of 1999. The amendment act aims to improve skills development in the country by promoting the provision of quality training and education, encouraging the growth of small and medium-sized enterprises (SMEs), and increasing the participation of previously disadvantaged individuals in skills development programs. The amendment act introduces several changes, including the establishment of a National Skills Authority, which is responsible for overseeing and coordinating skills development initiatives in the country. It also provides for the establishment of Sector Education and Training Authorities (SETAs) to facilitate skills development within specific sectors of the economy. The amendment act also expands the scope of the Skills Development Levies Act to include foreign companies operating in South Africa. This means that foreign companies are required to pay a skills development levy based on the salaries of their South African employees.

The act provides for the establishment of a National Skills Fund, which is intended to provide funding for skills development initiatives and promote research into skills development in South Africa. The Skills Development Levies Amendment Act 24 of 2010 seeks to promote skills development in South Africa and improve the competitiveness of the country's economy. The Act requires all employers whose annual payroll exceeds a certain threshold to pay a Skills Development Levy (SDL) of 1% of their total payroll to the South African Revenue Service (SARS). The funds

collected through the SDL are used to finance the Skills Development Fund, which is managed by the Sector Education and Training Authorities (SETAs). One of the main purposes of the SDL Amendment Act is to provide stipends to students who participate in Work Integrated Learning (WIL) programs, such as internships, apprenticeships, and leadership. The Act requires SETAs to allocate a portion of the funds from the Skills Development Fund to provide stipends to WIL students. The stipends are intended to cover the costs associated with the WIL program, such as transport, accommodation, and meals.

DUT is one of the institutions that benefit from the SDL Amendment Act. DUT students who participate in WIL programs are eligible to receive stipends from the SETAs. The stipends provide financial support to students to participate in WIL programs. The SDL Amendment Act also benefits DUT students in other ways. The Act requires employers to submit a Workplace Skills Plan (WSP) and an Annual Training Report (ATR) to the relevant SETA. The WSP outlines the skills development needs of the organization, while the ATR reports on the training that has been provided to employees. By submitting these reports, employers demonstrate their commitment to skills development, which can benefit DUT students who are seeking employment after graduation. the SDL Amendment Act plays a critical role in promoting skills development and providing financial support to students who participate in WIL programs. DUT students who take advantage of these opportunities gain valuable work experience and improve their chances of finding employment after graduation.

2.7.4. The Employment Service Act 4 of 2014 (Republic of South Africa, 2014)

The Employment Service Act 4 of 2014 is a South African legislation that aims to promote employment and regulate the provision of employment services. It sets out the requirements and procedures for job seekers and employers to access employment services provided by the state, private employment agencies, and other organizations.

One of the key aspects of the Employment Service Act is the regulation of professional skills for vacant posts. This means that employers are required to advertise vacant positions in a manner that ensures that all potential candidates who possess the required professional skills are given an equal opportunity to apply for the position. The Act

also requires that employers consider all suitable candidates for the position, regardless of their race, gender, disability, or other personal characteristics.

The Act also provides for the regulation of work-integrated learning, a program that combines academic study with practical work experience. Employers are required to provide suitable work-integrated learning opportunities to students, graduates, and other learners, and to ensure that these opportunities are relevant to their field of study and provide them with the necessary skills and experience.

The Employment Service Act aims to ensure that job seekers are given fair and equal opportunities to access employment services and job opportunities, while also promoting the development of professional skills through work-integrated learning opportunities. The Employment Service Act and DUT Cooperative Education can be linked in several ways, as both aim to promote the development of professional skills and provide opportunities for work-integrated learning.

The Employment Service Act requires employers to provide suitable work-integrated learning opportunities to students and graduates. This aligns with the objectives of DUT Cooperative Education, which seeks to provide students with the opportunity to gain practical experience in their field of study while completing their academic program. The Act can therefore benefit DUT Cooperative Education by encouraging more employers to offer work-integrated learning opportunities to students.

The Act helps to ensure that students who participate in DUT Cooperative Education are given fair and equal opportunities to access job opportunities after completing their program. This is because the Act requires employers to advertise vacant positions in a manner that ensures all potential candidates who possess the required professional skills are given an equal opportunity to apply for the position. This can help to reduce discrimination and ensure that all qualified candidates, including those who participated in DUT Cooperative Education, are considered for the position.

The Act can help to promote the development of professional skills among DUT Cooperative Education students by ensuring that work-integrated learning opportunities are relevant to their field of study and provide them with the necessary skills and experience. This can help to prepare them for the job market and increase their chances of securing employment after completing their academic program.

The Employment Service Act can benefit DUT Cooperative Education by promoting the development of professional skills, ensuring fair access to job opportunities, and encouraging more employers to offer work-integrated learning opportunities to students.

2.7.5. The South African Qualifications Authority (SAQA)

SAQA provided level descriptors for the South African National Qualifications Framework (NQF) in 2012 (SAQA, 2012). The goal of this framework is to maintain uniformity in learning attainment when allocating qualifications (SAQA, 2012). The framework organizes qualifications into ten levels, with higher education training falling between levels 6 and 10, to enable national and international comparability. Diplomas at level 6, advanced diplomas at level 7, postgraduate diplomas at level 8, master's degrees at level 9, and doctoral degrees at level 10. Each of these level descriptors uses a set of ten categories to indicate applied abilities (SAQA, 2012).

The South African Qualifications Authority (SAQA) and the Durban University of Technology (DUT) play critical roles in equipping students with professional skills. SAQA oversees developing and implementing the National Qualifications Framework (NQF), which provides a comprehensive framework for accrediting academic qualifications across South Africa (Republic of South Africa, 1995; SAQA, 2020). The NQF seeks to foster the development of competent people who are responsive to the needs of the economy (DUT, 2023).

DUT is responsible for equipping students with academic knowledge and practical skills through a variety of programmes and courses. DUT's Co-operative Education (Co-op) programs enable students to get actual work experience and build professional skills in their chosen subjects. Co-op programs combine academic learning with real-world work experiences, allowing students to apply theoretical knowledge in practical situations (DUT, 2023).

Students are prepared to join the workforce with confidence thanks to SAQA's validation of academic qualifications and DUT's supply of Co-op programs. Academic learning combined with practical work experience can help students acquire professional qualities that employers' value, such as communication, problem-solving, teamwork, and leadership. SAQA and DUT play an important role in strengthening

South African students' professional skills and ensuring that they have the information and skills needed to fulfil the demands of the labour market (SAQA, 2020; DUT, 2023).

The NQF level 6 competencies for a final-year DUT student in South Africa are listed below:

- Scope of knowledge – understand how to apply knowledge in particular contexts.
- Knowledge literacy – demonstrate the ability to interrogate multiple sources of knowledge in an area of specialisation.
- Method and procedure – apply appropriate standards to unfamiliar problems.
- Problem-solving – demonstrate the ability to use a range of skills to address complex problems.
- Ethics and professional practice – address ethical issues based on critical reflection.
- Accessing, processing, and managing information – the ability to critically review information gathered and synthesise data to develop creative responses.
- Producing and communicating information – present and communicate academic, professional, or occupational ideas to a range of audiences.
- Context and systems – able to operate effectively in a system.
- Management of learning – apply learning strategies to effectively address professional and ongoing learning needs; and
- Accountability – ability to take full responsibility for work, decision-making and use of resources, and full accountability for the decisions and actions of others where appropriate” (SAQA, 2012).

The NQF defined seven essential cross-field outcomes, which are broad objectives that guide all teaching and learning. It should be incorporated into qualifications at the appropriate level on the SAQA level descriptors of the NQF. Overall, these abilities indicate the talents and characteristics required for a successful transition into the workplace following graduation. DUT students can receive practical experience and improve these competencies through WIL experiences, which will assist prepare them for future professions.

SAQA's major outcomes.

- Demonstrating problem-solving skills through informed decision-making and critical thinking.
- Effective teamwork.
- Self-supervision.
- Demonstrate effective communication through oral or written presentations.

SAQA recognizes the following outcomes: identifying problems and solving them using accountable decision-making and critical thinking, effectively working as a team, self-management, and effectively communicating oral or written presentations. These are all key skills required for workplace success. Cooperative education (co-op) and work-integrated learning (WIL) can be very effective in helping students develop these abilities. Co-op and WIL activities allow students to obtain hands-on experience in their field of study while also applying classroom knowledge and abilities to real-world circumstances. Working in teams, for example, is a critical skill in many workplaces. Co-op and WIL experiences, give students the chance to work collaboratively with others in a real-world setting, helping them to develop their teamwork skills and understand how to effectively contribute to a team's success. Similarly, self-management is a key skill that is often developed through co-op and WIL experiences. By working independently and taking responsibility for their work, students can develop their time management and organizational skills, which are essential for success in the workplace. Effective communication is another critical skill that can be developed through co-op and WIL experiences. Students can communicate with a range of stakeholders, including co-workers, supervisors, and clients, which can help them develop their communication skills in different contexts and using different mediums (CHE, 2011; DUT, 2023).

Co-op and WIL experiences can allow students to gain a variety of vital skills that are required for success in the workplace. Students who apply their knowledge and skills in real-world settings might obtain a deeper understanding of their subject of study and be more equipped for their future professions.



Figure 5: SAQA critical outcomes (SAQA, 2012)

2.8 National Skills Development Strategy (NSDS)

The following literature discusses national skills development strategies focused on improving lower-level skills, training provision, improving the education, and training system, human capital, and the competitiveness of the country. The National Skills Development Strategy (NSDS) is a comprehensive framework aimed at addressing the skills gap and enhancing the competitiveness of a country's workforce. At its core, the NSDS focuses on improving lower-level skills through targeted training provision, enhancing the education and training system, developing human capital, and ultimately bolstering the overall competitiveness of the nation (DHET, 2011).

One key aspect of the NSDS is its emphasis on improving lower-level skills, particularly among marginalized or underserved populations. This includes initiatives to provide accessible and affordable training programs that cater to individuals with varying levels of education and experience (DHET, 2011). By focusing on foundational

skills development, the NSDS seeks to empower individuals to participate more fully in the workforce and contribute to the country's economic growth and development.

To address lower-1 NSDS also prioritizes improving the quality and relevance of education and training provision. This involves aligning curricula with industry needs, enhancing teaching and learning methodologies, and investing in infrastructure and resources to support effective skills development. By ensuring that education and training programs are responsive to the demands of the labour market, the NSDS aims to equip individuals with the skills and knowledge required to succeed in their chosen fields (DHET, 2011).

The NSDS recognizes the importance of developing human capital as a key driver of economic competitiveness. This involves investing in initiatives to attract, retain, and develop talent, including skills development programs, apprenticeships, internships, and lifelong learning opportunities. By nurturing a skilled and adaptable workforce, the NSDS seeks to enhance productivity, innovation, and resilience in the face of evolving economic challenges and opportunities.

The NSDS is designed to enhance the overall competitiveness of the country by strengthening its human capital base. By equipping individuals with the skills, knowledge, and competencies needed to succeed in the global marketplace, the NSDS aims to drive sustainable economic growth, create employment opportunities, and improve living standards for all citizens. Through targeted interventions and collaborative partnerships between government, industry, and educational institutions, the NSDS seeks to build a future-ready workforce capable of meeting the demands of a rapidly changing world (DHET, 2011).

2.8.1 National Skills Development Strategy I - 2001 to 2005 (Department of Labour, 2001)

NSDS, emphasizes equity and the need to support lifelong learning in the workplace. Learning demand is influenced by employer needs in both the public and private sectors. The effectiveness of delivery was critical to achieving the desired outcomes.

2.8.2. National Skills Development Strategy II - 2005 to 2010 (Department of Labour, 2005)

The vision of NSDS II was driven by five objectives, which are listed below.

- Prioritizing and disseminating essential skills for sustainable growth, progress, and equity.
- Prioritizing quality training for all employees.
- Developing skills for employability and long-term revenue.
- Encouraging specified groups and new entrants to participate in authorized work, integrated learning, and work-based programs to gain essential skills for the labour market and self-employment.
- Enhancing the quality and relevance of provision.

In NSDS II, the significance of equity, excellent training, and skill development at work was reiterated. The need for progress in employability was noted. NSDS II also emphasized the importance of assisting specified groups in gaining knowledge and experience in the workplace to enhance vital skills. The quality of the provision was noted as a problem that requires improvement (Department of Labour, 2005).

2.8.3. National Skills Development Strategy III-2011–2016 (Department of Higher Education and Training, 2011)

The NSDS is a plan put in place to address unemployment, a shortage of skills required for work in South Africa, and social and economic development. The NSDS is a strategic guide for skills development that provides direction for sector skill preparation and implementation in SETAs. According to NSDS III, one of the purposes of the NSDS is "to contribute to practicable skills development and equity of skills within the workplace and raise probabilities of employment among the youth by aligning the resources and skills supplied to the skills needs.

The vision of NSDS III is guided by the eight objectives outlined below.

- Developing a trustworthy skill planning method.
- Increasing admission to employment-oriented programs.

- Fostering a public FET college system that responds to sector, local, regional, and national skills need and priorities.
- Enhancing language and numeracy abilities for kids and adults to qualify for supplemental training.
- Improving workplace skill development.
- Funding cooperatives, small businesses, occupational non-governmental organizations (NGOs), and public training projects.
- Building a progressive state by improving public sector capability and service delivery.
- Developing career and vocational direction.

In NSDS III, the emphasis shifts toward institutional learning related to work-directed programs. It promotes the expansion of higher education to satisfy national skill demands. The use of workplace skills programmes is encouraged, as is the use of occupational-initiated training initiatives. Improved service delivery in the public sector is regarded as an absolute necessity. Language and literacy are important issues for facilitating further study.

NSDS III increased access to high-quality and appropriate education and training, as well as skills development opportunities such as workplace learning and experience, to empower all South Africans to participate effectively in the economy and society and reduce inequalities, even though the NSDS III term ended in March 2016.

2.8.4. National Skills Strategy Development IV 2016 (Department of Higher Education and Training, 2016)

Aims to better attend to national government priorities by prioritizing the development of skills for in-demand careers. For example, the country requires more craftspeople.

The NSDS IV vision was motivated by five objectives, which are described below.

- Achieving a balance between sectoral and national priorities.
- Strengthen the role of government ministries on SETA boards.
- To improve SETA efficiency and effectiveness.

- To focus on developing higher education institutions to meet these demands, including qualification design and delivery.
- Preserve work-based learning opportunities for learners.
- Encourage university and work-based learning for the current workforce.
- Support the NDP, NGP, and IPAP.

National Skills Strategy Development IV is currently being implemented; its term has not yet ended, so it is not safe to comment on its effectiveness until the National Skills Authority releases its findings on the strategy's drivers.

The National Skills Development Strategy (NSDS) is a framework for skill development in South Africa. The NSDS strives to improve access to education and training, foster the growth of a skilled workforce, and address the country's skills shortages. Cooperative Education and Work-Integrated Learning (WIL) are critical in acquiring professional skills for the real world of work, and they are key to the NSDS's objectives. Cooperative Education and Work-Integrated Learning (WIL) are work-based learning strategies that allow students to apply academic knowledge and gain practical experience in a workplace setting. These experiences allow students to acquire a variety of professional abilities, including problem-solving, critical thinking, teamwork, communication, and leadership, all of which are essential for career success. Cooperative Education and WIL programs also encourage the development of skills that are in line with industry needs, which helps to close the skills gaps highlighted by the NSDS. Working closely with business partners, these programs ensure that students learn skills that are in high demand in the labour market, enhancing their employability and contributing to the economy's requirements. Furthermore, Cooperative Education and WIL can help to bridge the gap between theory and practice, giving students a greater knowledge of how to apply their academic learning in the real world. This can improve their learning experience and prepare them for the challenges that may arise in their future careers.

The NSDS recognizes the value of work-based learning models like Cooperative Education and WIL in building the skills required for success in the workplace. By fostering the development of these programs, the NSDS hopes to promote access to

excellent education and training, produce a skilled workforce, and alleviate South Africa's skills shortages.

2.9. The funding for Sector Skills Development from employers

According to Skills Development Levies Amendment Act 24 of 2010 (Republic of South Africa, 2010), each employer who is registered with SARS for Pay As You Earn (PAYE) and who has a yearly payroll (total salaries and wages including bonuses, commission.) above R500 000 (approximately R41 000 per month), or 50 plus staff members is mandatory to pay skill levies. Employers are compulsory to pay 1% of their payroll to the skills development levy fund every month, and the levy may not be deducted from employees' pay. The levy is taken to Sector Education and Training Authorities (SETAs) and the Skills Development Fund to fund skills training.

Recognising the dire necessity to advance skills development, in 1998, the South African Parliament approved the Skills Development Act which drew a new Sector Training and Education Authority (SETA) system. In core, the strategy was to develop a sequence of sector skills plans within an obviously defined framework of the National Skills Development Strategy (Republic of South Africa, 2010; Department of Labour, 2001).

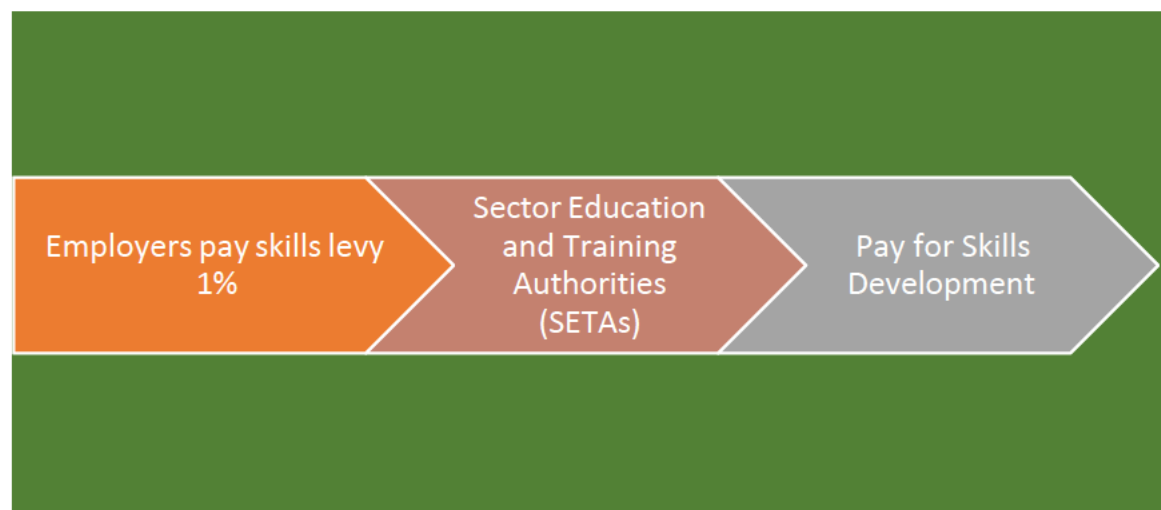


Figure 6: Skills Development process (Adapted from Skills Development Levies Amendment Act 24 of 2010) (Republic of South Africa, 2010)

2.9.1. Sector Education and Training Authorities (SETAs)

SETAs are government entities entrenched in terms of the Skills Development Act, as Amended. Their directive is to facilitate Skills Development by applying learning programmes and grant disbursements. SETAs are mandated by skills development Act to simplify the overall monitoring of education and training as charted in the National Skills Strategy Development. SETA sustains itself by resources collected through payments made by employers as a direct outcome of the Skills Development Act and the Skills Levy Act (Shuttleworth, 2018).

21 SETAS represent a particular industry sector.

- AGRISETA -Agricultural Sector
- BANKSETA- Banking Sector
- CETA - Construction SETA
- CHIETA - Chemical Industries SETA
- CATHSETA - Culture Arts, Tourism, Hospitality and Sports SETA
- ESETA - Energy and Water SETA
- ETDPSSETA - Education Training and Development Practices SETA
- FPMSETA - Fibre, Processing & Manufacturing SETA
- FOODBEV - Food and Beverage Manufacturing Industry SETA
- FASSET SETA - Financial and Accounting Services SETA
- HWSETA - Health and Welfare SETA
- INSETA - Insurance SETA
- LGSETA - Local Government SETA
- MERSETA - Media, Advertising, Information and Communication Technologies SETA
- MICTSETA - Manufacturing, Engineering and Related Services SETA
- MQSETA - Mining Qualifications Authority SETA
- PSETA - Public Service SETA
- SASSETA - Safety and Security SETA
- SERVICES SETA
- TETA - Transport SETA
- W&RSETA - Wholesale and Retail SETA.

The 21 Sector Education and Training Authorities (SETAs) in South Africa are responsible for implementing skills development programs in different sectors of the economy. One of their main purposes is to fund skills development initiatives, including internships, learnership, and work-integrated learning programs. The stipend paid to students participating in these programs can vary depending on the SETA and the specific program. The stipends range from R1500.00 to R6500.00 per student per month. The specific criterion for each program is set by the relevant SETA and can depend on factors such as the level of the program, the duration of the program, and the industry sector in which it is based. The SETAs play a critical role in supporting skills development in South Africa, particularly for young people who may not have access to formal education or training opportunities (DHET, 2016). The stipends paid by SETAs can help to alleviate some of the financial burden on students, making it possible for them to participate in work-integrated learning and other skills development programs.

In addition to providing financial support, the SETAs also work closely with employers and educational institutions to develop programs that are custom-made to the specific needs of each industry sector. This helps to ensure that students gain the skills and experience that are in high demand by employers and that they are well-prepared for the workplace (DHET, 2016). The DUT, Co-operative Education (Co-op) and the Sector Education and Training Authorities (SETAs) both play an important role in providing students with professional skills.

DUT's Co-op programmes offers students the opportunity to integrate theoretical knowledge with practical work experience, helping them to develop the professional skills needed in the workplace. Co-op programmes provide students with exposure to the real-world work environment, allowing them to develop skills such as teamwork, communication, problem-solving, and leadership. Through Co-op, DUT aims to produce graduates who are not only academically qualified but also work-ready and capable of contributing meaningfully to the workforce. SETAs, on the other hand, are responsible for promoting skills development in specific sectors of the economy. They work with employers, industry bodies, and training providers to develop and implement skills development programs that address the specific needs of each sector. SETAs also provide funding for training and skills development initiatives, making it easier for employers and training providers to offer learning opportunities to their employees. By

working closely with employers and industry bodies, SETAs can identify the skills needed in each sector of the economy and develop training programs that address these needs. This ensures that students who complete SETA-accredited training programs are equipped with the professional skills required in their chosen industries.

Both DUT's Co-op and SETAs play a crucial role in providing students with professional skills. Through their collaboration with industry bodies and employers, they identify the specific skills needed in the workforce and provide students with the training and work experience necessary to develop those skills. This helps to ensure that graduates are work-ready and able to contribute meaningfully to the economy. DUT has established vital partnerships with various SETAs including the local Government SETA and the wholesale and retail sector education and training, among others. These collaborations play an instrumental role in supporting DUT's mission to enhance students' employability through industry aligned skills development and WIL opportunities.

❖ The Local Government SETA (LGSETA) (Republic of South Africa, 1998; Local Government SETA [LGSETA], 2023)

The Local Government SETA (LGSETA) is a statutory body established under the Skills Development Act in South Africa (Republic of South Africa, 1998; LGSETA, 2023). It aims to promote skills development in the local government sector and ensure that local government institutions have access to a skilled and capable workforce. Co-operative Education plays a critical role in preparing Durban University of Technology students for professional skills that arise from real-life work experiences, including those in the local government sector. Through Co-operative Education, DUT students can engage with local government institutions and gain practical work experience directly relevant to their academic studies. This can include placements in public administration, community development, and environmental management (DUT, 2023). Through these placements, students can develop professional skills such as problem-solving, critical thinking, teamwork, communication, and leadership, which are essential for success in the local government sector. Education also plays an important role in helping to address the skills gaps identified by the LGSETA. By working closely with local government institutions, DUT can ensure that students

develop skills in high demand in the local government sector. This can help increase the employability of DUT graduates and contribute development of a skilled and capable workforce in the local government sector. Moreover, Co-operative Education can help to promote closer collaboration between DUT and local government institutions. Through these partnerships, DUT can gain a better understanding of the needs and challenges of the local government sector, and local government institutions can benefit from the knowledge and skills of DUT students and academics. In summary, the LGSETA recognizes the importance of Co-operative Education in preparing DUT students for professional skills that arise from real-life work experiences, including those in the local government sector. By promoting the development of these programs, the LGSETA is working to promote skills development in the local government sector and ensure that local government institutions have access to a skilled and capable workforce (Republic of South Africa, 1998; LGSETA, 2023; DUT, 2023).

**❖ The Wholesale and Retail Sector Education and Training Authority
(W&RSETA) (Wholesale & Retail SETA [W&RSETA], 2023)**

The Wholesale and Retail Sector Education and Training Authority (W&RSETA) is a statutory body in South Africa that aims to develop and implement skills development programs that address the needs of the wholesale and retail sector. The W&RSETA plays an important role in supporting the preparation of Durban University of Technology (DUT) Work-Integrated Learning (WIL) students to gain professional skills. Through Co-operative Education, DUT students can engage with wholesale and retail institutions and gain practical work experience that is directly relevant to their academic studies. This can include placements in areas such as retail operations, supply chain management, and customer service. Through these placements, students can develop professional skills such as problem-solving, critical thinking, teamwork, communication, and leadership, which are essential for success in the wholesale and retail sector.

Co-operative Education can also help to address the skills gaps identified by the W&RSETA in the wholesale and retail sector. By working closely with wholesale and retail institutions, DUT can ensure that students develop the skills that are in high demand in the sector. This can help to increase the employability of DUT graduates and

contribute to the development of a skilled and capable workforce in the wholesale and retail sector. In addition, Co-operative Education can help to promote closer collaboration between DUT and wholesale and retail institutions. Through these partnerships, DUT can gain a better understanding of the needs and challenges of the wholesale and retail sector, and wholesale and retail institutions can benefit from the knowledge and skills of DUT students and academics.

The W&RSETA recognizes the importance of Co-operative Education in preparing DUT students to gain professional skills in the wholesale and retail sector. By supporting the development of these programs, the W&RSETA is working to promote skills development in the wholesale and retail sector and ensure that wholesale and retail institutions have access to a skilled and capable workforce (W&RSETA, 2023; DUT, 2023).

2.10 SUMMARY

The second chapter included a literature analysis of key ideas related to Durban University of Technology graduates' professional skills when they emerge from the workplace. The evaluation delves into the definitions of cooperative education, work-integrated learning, and the DUT strategy for 2030. The chapter also covers the South African Council for Higher Education, the South African Skills Development Act of 1998, the South African Qualifications Authority, and the National Skills Development Strategy. The research review emphasizes the value of work-integrated learning in encouraging academic success, improving communication and leadership abilities, and building effective teamwork among students. It also emphasizes the responsibility of the South African government to provide an institutional framework for developing and improving workforce skills through policies such as the South African Skills Development Act and the National Skills Development Strategy.

The next chapter explains how the quantitative approach was employed to investigate the research problem. It details the sampling method used to gather data from the target population DUT graduates who participated in a work-integrated learning program. It outlines the data collection methods, including surveys and interviews, and discusses the ethical considerations that were addressed throughout the research process.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter explains how quantitative approach was used to investigate the research problem. It also explains the sampling method used, to collect data from the target population which is DUT graduates who had participated in a work-integrated learning programme. The chapter outlines the data collection methods used, which included surveys and interviews, and discusses the ethical considerations that were considered during the research process.

Furthermore, the chapter provides a detailed description of the statistical techniques used to analyse the data, such as descriptive statistics and inferential statistics, and explains how the data was verified to ensure accuracy. It also discusses potential sources of error and limitations of the study, such as the possibility of response bias and the limited generalizability of the findings to other contexts.

Chapter 3 provides a comprehensive overview of the research methodology used in the study, outlining the theoretical framework, research design, sampling strategy, data collection methods, ethical considerations, data analysis techniques, and potential limitations of the study.

3.1.1 RESEARCH METHODOLOGY

Elg, Gremyr, Halldorsson, and Wallo (2020) define methodology as a general research strategy that plans the technique in which a research project will be carried out and, among other things, categorizes the processes to be employed. In other words, research methodology is a procedure for collecting data and information to draw various findings and treatments. Mohajan (2018) claims that "research is a systematic process of collecting, analysing and interpreting data to increase the understanding of a phenomenon about which we are interested". Research methodology is the overall research strategy related to the model or theoretical framework, whereas research method refers to the systematic approach to study research topics through data collecting, data analysis, or sampling procedure.

Torres-Carrión, González-González, Aciar, and Rodríguez-Morales (2018), defined it as a set of standards, principles, and stringent criteria that support and guide scientific inquiry to build and increase our understanding of a certain phenomenon. The research strategy describes the practical application of scientific research in terms of data collection, analysis, and interpretation (Gelo, Braakmann and Benetka, 2008). This chapter investigates the procedure.

3.2 RESEARCH DESIGN

The research design, as indicated by Hennink, Hutter, and Bailey (2020) is a strategy for a study utilized as a guide in collecting and analysing the data. It is a blueprint that lags in the implementation of a study. Research design is the outline for the collection measurement and analysis of data. During the research design, the researcher must clarify the method in the research process, which authorizes the researcher to predict and prevent subsequent mistakes, bias, or misrepresentations. Mohajan (2018) express that if the respondents are considered at a fixed point in time, that study is said to have employed a cross-sectional philosophy. Feher (2017) sustains that cross-sectional structure comprises of the variety of data from some random examples of population mechanisms just a single time. Descriptive research was characterized by Mohajan (2018) as an accurate report to distinguish examples or patterns in a condition, yet not the underlying linkages among its various components.

Descriptive research is not limited to quantitative studies; rather, it can use elements of quantitative research to measure central propensity, which includes the mean, median, mode, deviation from the mean, variation, percentage, and correlation among variables (Bergin, 2018).

3.2.1 RESEARCH DESIGN ASPECTS

Research design encompasses the blueprint or framework that guides the entire research process, including the selection of methods, data collection procedures, and analysis techniques. It involves making decisions about how to answer research questions or test hypotheses effectively and efficiently. The importance of research design cannot be overstated, as it ensures that the study is well-structured, rigorous, and capable of generating valid and reliable results. A sound research design minimizes biases,

maximizes internal and external validity, and enhances the generalizability of findings. It serves as the foundation upon which meaningful conclusions can be drawn, contributing to the advancement of knowledge in the respective field of study.

3.3 TARGET POPULATION

While the entire population of DUT could have been considered for the study, the research specifically narrowed its focus to respondents with some familiarity or exposure to Co-operative Education and WIL. By targeting this subset of the student body, the study aimed to gather insights from individuals with direct experience or knowledge of these educational approaches. Thus, this study's target population included all DUT students who have varying degrees of understanding or involvement in Co-operative Education and WIL initiatives. This deliberate selection criteria allowed for a more nuanced exploration of the subject matter, as respondents with prior exposure to these concepts are likely to offer more informed perspectives and insights. Additionally, focusing on this specific subgroup improves the relevance and applicability of the research results to the context of DUT, providing valuable insights that can inform the development and enhancement of Co-operative Education and WIL programs at the university.

This was a quantitative research study based in KwaZulu-Natal, South Africa. A cross-sectional study was conducted using online Google Forms. A structured questionnaire was designed and used to collect primary data from students. The study invited all students who have completed WIL as part of their qualifications to participate. The questionnaire was pre-tested electronically via email amongst potential participants across all six faculties within the DUT, inviting them to complete an online survey (convenience sampling method). A link was included in the email, and the respondents were requested to click on the link and complete the survey. The survey participation was voluntary and anonymous. Only one response was allowed per email, hence increasing the reliability of the data. A total of 313 students participated in the online survey. The questionnaire comprised closed and open-ended questions, which included demographic information and three sections to evaluate the perceptions of students of WIL. Each section asked participants to rate their feelings towards professional skills in WIL, practice of WIL and attitude towards WIL. A 5-point Likert Scale (1 = strongly

disagree; 2 = disagree; 3 = neutral; 4 - agree; and 5 = strongly agree) was used to measure their responses.

3.4 SAMPLING PROCEDURE

Sampling is the method of choosing a segment of the populace as per acknowledged norms to speak to the whole populace of interest which is called the target population. Sampling procedures give an extent of strategies that empower a decrease in the information required by gathering just information from a sub-group, rather than from the entire population (Etikan and Bala, 2017).

Sampling methods play a vital role in ensuring the representativeness and generalizability of study findings. Two significant classes of sampling methods commonly employed in research are non-probability sampling and probability sampling. Probability sampling, also identified as random sampling, is a methodological approach in which every element or component of the population under study has an equal and independent chance of being selected for inclusion in the sample (Jackson, 2019).

Among the most widely utilized probability sampling methods are:

- **Simple Random Sampling:** In this method, each population participant has an equivalent chance of being nominated, and selection is conducted randomly. This can be achieved, for example, by using random number generators or drawing lots.
- **Systematic Sampling:** Systematic sampling includes choosing every participant in the population and then afterwards a random initial point has been determined. This sampling provides a structured approach to sampling while still maintaining randomness and representation.
- **Stratified Random Sampling:** In stratified random sampling, the population is separated into different subgroups or strata based on certain appearances (e.g., age, gender, socioeconomic status). Samples are then randomly selected from each stratum in amount to its size, warranting representation from all subgroups.
- **Cluster Sampling:** Cluster sampling includes separating the population into clusters or groups, classically based on geographical propinquity or

organizational structure. Random clusters are then nominated, and all members within the selected clusters are involved in the sample.

Probability sampling methods offer exclusive advantages and deliberations, dependent on the research objectives, population features, and obtainable resources. By employing these sampling, researchers can enhance the validity and reliability of the discoveries, as probability sampling warrants that every component of the population has an equal opportunity of being included in the sample, thus lessening bias and increasing the likelihood of producing representative results.

3.4.1 NON-PROBABILITY SAMPLING

Non-probability sampling methods, as described by Ngulube (2020), involve the selection of participants in a manner that does not afford each member of the population an equal opportunity to be involved in the sample. Instead, this sampling depends on the investigator's judgment, convenience, or availability of participants, leading to the possibility that certain groups or individuals may be disproportionately represented or less represented in the sample.

Several common non-probability sampling methods include:

- ❖ **Snowball Sampling:** initial participants are nominated based on precise criteria or characteristics appropriate to the research study. The participants then refer or "snowball" additional participants who also meet the specific criteria, leading to a chain referral process. This sampling is particularly beneficial for accessing difficult-to-reach populations or individuals who share unique experiences or attributes.
- ❖ **Convenience Sampling:** It includes choosing participants who are willingly available and accessible to the investigator. This sampling is regularly used due to its convenience and practicality, as researchers may choose to recruit participants from easily accessible locations, such as universities, community centres, or online platforms. While convenient, this sampling method may be associated with bias, as participants may not be illustrative of the broader population.

- ❖ **Consecutive Sampling:** Is a consecutive or sequential sampling, it includes choosing participants based on their availability during a specific timeframe or period. This method is commonly used in longitudinal or time-sensitive studies, where researchers aim to recruit participants as they become available over a continuous period.
- ❖ **Quota Sampling:** Quota sampling involves dividing the population into planned quotas based on detailed characteristics, such as age, gender, or occupation. The participants to fill these quotas until they are adequately represented in the sample. While quota sampling allows for greater control over sample composition, it may still result in bias if quotas are not accurately reflective of the population.

Each of these non-probability sampling methods offers advantages and deliberations, dependent on the research objectives, population characteristics, and accessible resources. While non-probability sampling methods may not guarantee the representativeness of the sample, they remain valuable tools for researchers seeking to explore specific phenomena, populations, or contexts flexibly and efficiently.

In the current research study, the researcher will employ a non-probability sampling technique known as judgmental or purposive sampling. This sampling method involves the deliberate selection of participants based on the researcher's judgment, knowledge, and expertise in the field of study (Etikan, and Bala, 2017). Unlike probability sampling methods where every element of the population has an equal possibility of being included in the sample, judgmental sampling allows researchers to select participants who are deemed most suitable or relevant to the research objectives and questions.

In judgmental sampling, researchers exercise their discretion to choose individuals or cases that possess certain characteristics, traits, or experiences that are essential for addressing the research objectives effectively (Etikan and Bala, 2017). By leveraging their expertise and understanding of the research topic, researchers can identify participants who are knowledgeable, experienced, or representative of the phenomenon under investigation. This targeted selection approach ensures that the sample is well-suited to provide insights and perspectives relevant to the research questions, thereby enhancing the accuracy and reliability of the data collected (Etikan, Musa, and Alkassim, 2016).

Judgmental sampling is particularly appropriate when the research aims to explore specific phenomena, behaviours, or contexts that may be best understood through the perspectives of individuals who possess specialized knowledge or experiences. Selecting participants based on their relevance to the research focus, judgmental sampling enables researchers to gather rich, in-depth data that aligns closely with the objectives (Etikan and Bala, 2017).

The use of judgmental sampling in the current research study is justified by its capacity to effectively respond to the research questions, fulfil the study objectives, and ensure the collection of accurate and reliable data. By strategically selecting participants who possess relevant expertise, insights, or experiences, investigators can exploit the quality and validity of the research results, ultimately contributing to a more comprehensive understanding of the phenomenon under investigation sampling and judgmental sampling or purposive sampling.

3.4.2 SAMPLE SIZE

Sekaran and Bougie (2019) propose that a sample be drawn from the population and made up of individuals from that population. The sample size represents the number of persons or units chosen to participate in the study. DUT operates five campuses in Durban and two in Pietermaritzburg. The Durban University of Technology has roughly 33,000 students and 56 courses across six colleges. This study's target audience consists of Durban University of Technology students, specifically those participating in Work Integrated Learning courses. Each year, around 3000 students register for Work Integrated Learning at DUT. Work Integrated Learning might last from three to six months. Some students are eligible for WIL in their second year of study, whereas others are only eligible in their third and final year of study. The researcher calculated a simple size of 300 that will adequately represent the population. A sample of 313 WIL students from six (6) different DUT faculties was obtained to participate in the study.

3.5 DATA COLLECTION

Data collection is the practice of deliberately, assembling and determining data on focused factors to answer the research problem (Swain, 2017). It empowers the study to answer the research questions credibly and convincingly. There are two categories

of data, primary and secondary data. Primary data implies exclusive information that has been gathered in the field under the influence and supervision of a researcher.

Quantitative data will be collected through a questionnaire, whereas qualitative data through a questionnaire and interviews. Initially, the questionnaire was sent via Microsoft links to respondents. Afterwards, an interview was conducted with those who participated in the questionnaire.

Microsoft link is an online link of Microsoft Outlook which was used to distribute the questionnaire. Also, emails were sent together with a link included in the participants' emails, where the respondents were requested to click on the link and complete the survey. Other respondents were visited on their workplaces to complete the survey. The researcher estimated the time to complete the questionnaire as 15 minutes. Two hundred and ninety-one (291) respondents respond to the questionnaire.

3.5.1 QUESTIONNAIRE

Astuti (2016) defines a questionnaire as a research tool that comprises a pre-set of questions which relate to the research topic and its intentions to collect information from participants. A questionnaire is an investigation tool containing pre-formulated questions, to be responded to by a respondent (Astuti, 2016). Questionnaires are well-organized in data collection, especially when variables of interest have been recognized (Astuti, 2016). The questionnaire design was based on the findings from the literature review. Questionnaires are usually on whichever open-ended or pre-coded questions or both. Open-ended questions are enquiries asked, without any options provided (Bryman and Bell, 2015). Closed questions offer a respondent a series of pre-formulated possibilities, to select from (Astuti, 2016). The questionnaires for this study were made up of both open-ended and closed questions and were circulated to the respondents of this study. According to Astuti (2016), there are a variety of traditions to administer surveys, personally, posted or electronically. In this study, surveys were personally and electronically administered through emails

A research questionnaire for this study is a combination of close-ended questions and open-ended questions. Open-ended, long-form questions offer the respondent the capacity to extravagant on their thoughts. Firstly, a questionnaire was given out to the five participants. The Likert scale and Open-ended type of questions were selected

since the investigator is using both quantitative and qualitative research that necessitates in –depth responses regarding professional skills gained during Work Integrated learning or Work based Learning.

3.5.2 INTERVIEWS

Deterding and Waters (2018) define interviews as a research method which includes conducting intensive individual discussions with respondents to explore their viewpoints on a specific knowledge, program, or condition. The second method of collecting data was interviews, there were two kinds of interviews, structured with prepared questions and unstructured interviews which were the group discussion on the topics related to the research topic. The interviews were face-to-face, about 25 minutes long per subject.

3.5.3 QUESTIONNAIRE DESIGN

The questionnaire design was arranged with the research aims and objectives of the study. According to Sekaran and Bougie (2013), a sound questionnaire design should emphasise three main areas.

- (1) Phrasing of questions.
- (2) Command of issues with regards to the method of categorisation of variables, scaled and coded; and
- (3) The overall arrangement of the questionnaire. The information contained in the questionnaire was modified from previous research studies conducted on a similar study area.

The questionnaire was separated into 4 sections; Section A for demographics, Section B for Workplace learning skills, Section C for Practice on WIL Section D for Attitude on WIL Section A: This section provided space for the demographic information of the respondents. This information involved race and age. The other sections of the questionnaire collected information based on the research objectives aims and the purpose of this study. This information is presented annexure 4.

3.6 PILOT STUDY

After the questionnaire had been developed and evaluated for meaning, grammatical mistakes, and absence of vagueness by the supervisor and Institutional Research Committee (IREC), pilot research was carried out. According to Hussain (2016), the pilot study ensures that questionnaire issues are addressed early on to avoid limits in the main questionnaire, and it also allows the researcher to assess the correctness and suitability of the research approach. A pilot study was immediately undertaken with ten (10) participants to determine whether the proposed research design, technique, and measuring instruments based on the study were applicable and effective.

The investigator considered that the survey efficiently collected the needed data and was critical in gathering information for the main research investigation. The pilot study also helped the researcher develop a flow in the way questions were asked, and it was beneficial in assessing the time and expenses associated with administering the data-collection tool to potential participants. The following section relates to how the questionnaires were administered.

3.7 ADMINISTRATION OF QUESTIONNAIRE

This study includes two questionnaires: one for online email and one for hand delivery by the researcher. Due to Coronavirus (COVID-19) pandemic restrictions, questionnaires were distributed to Durban University of Technology students who wished to participate in the study via the intranet email capability. The file included the questionnaire, a cover letter outlining the study, and a consent letter. The respondents (Durban University of Technology WIL students) were asked to print all the attachments, fill out the questionnaire and consent letter, and scan them back to the researcher. The students who arrived in the office were offered the option of hand-delivering the surveys to the researcher's office. The researcher hand-delivered questionnaires to the other respondents (students with a permit to come to campus/co-op officer). The respondents were properly informed about the study and the fact that they might opt not to participate if they so desired, with no consequences. In most cases, questionnaires were left with responders to complete and then collected after a week. However, several were finished on the spot. The surveys were also emailed to WIL

students with a clear description of the study and when they were due back to the researcher.

3.8 ETHICAL CONSIDERATIONS

The four ethical principles are no violation of privacy, no injury to participants, no lack of informed permission, and no deceit. Furthermore, participants will not be requested to commit any activities or make words that may embarrass or damage others. In this study, each participant's consent will be obtained through a written letter of consent that also states the goal of the investigation. Participants will be requested to freely participate. Furthermore, data collected from participants in the form of research questionnaires will be screened by the research supervisor to ensure adherence to the ethical clearance required to administer the questionnaire, which will be obtained from the Faculty of Management Sciences at Durban University of Technology. The identities of all participants will remain confidential.

3.8.1 Informed consent

To ensure participant safety and well-being, human subjects' studies must adhere to ethical standards and norms. In this scenario, it is praiseworthy that the participants were fully informed of the study's goal and potential repercussions before signing the consent form. The fact that the participants were informed that their participation was voluntary and that they might withdraw at any time is equally important. This ensures that participants are not coerced or pressured into taking part in the study and have complete control over their participation. It is encouraging that the study did not subject the subjects to any physical or emotional hazards. This implies that the researcher made necessary efforts to ensure safety and well-being.

3.8.2 Permission

The researcher made a formal written request for permission to conduct research to the Office of the Selected University Research Directorate. An authorization letter was obtained. The Faculty Research Committee (FRC) approved the research proposal, which was then forwarded to the Institutional Research Ethics Committee (IREC) for ethical approval, along with each of the data collection instruments: Letter of Information and Consent forms, Letter of Permission, and Covering Letters. An ethics

clearance was acquired. Following preliminary ethical approval, the researcher investigated the data collection instruments in a pilot trial. The pilot project's results were submitted to IREC for full approval before data gathering for the main study began. Ethical approval to conduct the research was granted on November 1, 2023. As the study took place in the post-COVID-19 period, data had to be collected online due to remaining government regulations that restricted close physical interaction.

Each set of questionnaires delivered to participants included a comprehensive package consisting of a cover letter, a Letter of Information, and a Consent Letter. The cover letter acted as an introduction communication, outlining the research study and its goal. It underlined the study's relevance and the importance of participants' contributions to the research aims. Furthermore, the cover letter provided brief information on the researcher, promoting transparency and trust by introducing the person performing the study. The Letter of Information supplied in the questionnaire packet provided participants with full information about the research study, including its objectives, methodology, and expected outcomes. This document clarified the nature of involvement by detailing the procedures required and any potential risks.

The Consent Letter included with the questionnaire packet allowed participants to formally consent to their participation in the study. It said that participation was voluntary, that participants had the opportunity to withdraw from the study at any time, and that their responses would be kept personal and anonymous. By getting participants' explicit consent, the study followed ethical requirements and honoured their autonomy and rights as research subjects.

The presence of a cover letter, a Letter of Information, and a Consent Letter with each set of questionnaires, emphasized the importance of ethical behaviour and participant participation in the study process. These materials not only provided participants with important study information but also indicated the researcher's commitment to performing the research in a transparent, ethical manner.

3.8.3 Confidentiality

The Letter of Information and Consent letter also promised the participants anonymity, data confidentiality, and the preservation of their rights and interests. The Letter of Information also included a brief explanation of the study's purpose and procedures.

The researcher safeguarded the confidentiality of participants by asking them to sign rather than provide their complete names. As a result, their names could not be found in any study-related documents.

The researcher also notified the participants that their responses would remain confidential throughout the study. The research data was only accessible to the researcher and research supervisors, and the information in the research report could not be used to identify individuals. All study data is securely held, and participants' identities will not be disclosed throughout the study or until the results are released. The materials obtained will be kept in the supervisor's custody and disposed of after 5 years in a way that preserves the participants' confidentiality.

3.9. VALIDITY

The study's validity is determined by its reliability, and reliability is dependent on validity. Because the study employs mixed methodologies, validity and reliability will be explored in quantitative research. Validity indicates that the research tool measures what it is designed to measure.

3.10. RELIABILITY

Zulu (2016) defines reliability as the consistency and stability of a data collection procedure in delivering consistent results when applied repeatedly under similar settings. In this study, dependability is critical to ensuring that the research instruments, notably the questionnaire, produce accurate and consistent data when administered to participants.

The pilot study examined the reliability of the questionnaire and produced good findings, demonstrating that the questionnaire was clear and efficiently met the study's objectives. This indicates that the questionnaire was internally consistent and stable, resulting in trustworthy responses. The questionnaire analysis supported the dependability of the acquired data, since the replies were consistent and in line with the research objectives.

By proving reliability, the questionnaire boosts confidence in the validity and legitimacy of the research findings. Researchers can be confident that the data acquired

accurately represent the phenomena under inquiry, allowing for meaningful interpretation and analysis. Furthermore, reliability improves the study's replicability by ensuring that identical results may be predicted when the research is duplicated or extended later.

The questionnaire's reliability in producing consistent and predictable data demonstrates the methodological rigour and integrity of the research process. By assuring dependability, researchers can increase the credibility and validity of their findings, contributing to the overall quality and effect of the study outcomes.

3.11 DATA ANALYSIS

Data analysis, as defined by Azungah (2018), is the methodical interpretation of data gathered during the data-collecting stage. In the following chapter, the questionnaire findings will be thoroughly analysed. The quantitative data will be examined, and significant insights will be visually displayed using pie charts to provide a clear summary of the findings. The chapter strives to provide a thorough and nuanced view of the research findings, integrating quantitative perspectives to offer a rich portrayal of the research topic.

3.11.1 Quantitative data analysis and presentation

The focus of the descriptive statistics was to present the demographic composition of respondents, exploring gender, racial, and age distributions, alongside faculty affiliation and educational qualifications. Descriptive statistics utilizes two ways of data description, namely the numerical and graphical (DePoy and Giltin, 2019). According to Wilson (2014), descriptive statistical analysis relates to the summary of data in tables and graphs. According to Bougie and Sekaran (2019), descriptive statistics is a method used to analyse, classify and summarise data and to provide a description of the phenomena of interest. Inferential statistics was used in this study to test hypotheses formulated by applying novel statistical methods such as the Chi-squared test, and Pearson's correlation analysis. Cronbach's Alpha was computed to measure the reliability of the item's internal consistency of the constructs and their stability. Barlett's Test of Sphericity (BTS) and Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy were also conducted to test the construct validity of the measuring instrument.

3.12. SUMMARY

This chapter describes the study's research approach and methodology. It explained why questionnaires were employed to collect qualitative and quantitative data to fulfil the research objectives. The students' questionnaires were reviewed, and a pilot study was conducted to ensure the validity and reliability. The methods for requesting permission to conduct the research and securing ethical clearance from IREC were detailed. The data analysis and discussion of the findings are presented in the following chapter.

CHAPTER 4

ANALYSIS AND PRESENTATION OF DATA

4.1 INTRODUCTION

In this chapter, the researcher analysed and interpreted results obtained from the questionnaire. The survey questionnaire consisted of 4 sections, namely Section A (demographic information such as age, gender, education, and work experience to contextualize responses), Section B (assessed key employability skills developed in workplace settings, including teamwork, communication, and problem-solving), Section C (examined respondents' experiences with WIL practices and the application of theory in real workplace contexts) and Section D (explored participants' perceptions and attitudes toward WIL, including motivation and perceived benefits).

Furthermore, the surveys contained questions/statements on a Likert Scale from 1-5, with 1: Strongly Disagree and 5: Strongly Agree. The questionnaire contained 22 Likert scale questions. The questionnaires were sent to DUT students using the online survey. Only 313 respondents completed the survey and were considered for the analysis of this study. The results were presented in the form of tables and graphs. The data was analysed using the Statistical Package for the Social Sciences (SPSS), version 29.02. The $p\text{-value} < 0.05$ was regarded as statistically significant.

In the journey towards preparing university students for the demands of real-world work environments, co-operative (Co-op) programs play a central role. This chapter examines quantitative and qualitative aspects of Co-op initiatives at universities using data collected at DUT, providing a comprehensive analysis of their effectiveness in equipping students with essential professional skills.

The quantitative data analysis and presentation segment begins by examining the demographic composition of respondents, shedding light on gender, racial, and age distributions. The analysis further explores the key role players involved in supporting WIL implementation, highlighting the collaborative efforts that will contribute to students' educational and professional development. It investigates students' attitudes towards WIL as a tool for enhancing professional skills, offering insights into the perceived benefits and challenges associated with these programs.

Transitioning to the qualitative data analysis and presentation section, the focus shifts towards understanding the role of WIL in preparing students for real-life work skills. It delves into the compulsory nature of WIL, and the challenges students face in finding suitable workplace placements. This includes the competitive nature of placements and the duration of WIL placements, typically lasting six months. It explores the monitoring of WIL by academic departments and the relationships between students, workplace supervisors, and WIL coordinators, clarifying the dynamics that shape the WIL experience for students.

Through a comprehensive examination of quantitative and qualitative data, this chapter aims to provide valuable insights into the nature of Co-op programs at universities, highlighting their role in bridging the gap between academic learning and practical application in real-world settings.

4.2 ANALYSIS OF BIOGRAPHICAL DATA

Descriptive statistics aim to present huge amounts of data in a simple, understandable manner. The demographic breakdown of the survey respondents in the current study shows that more than half (61.35%) were female and 38.02% were male, presenting a notable gender distribution (Table 4.1 and Figure 4.1).

Table 4.1: Gender distribution of the respondents (n = 313)

Gender	Frequency	Percentage (%)
Female	194	61.98
Male	119	38.02
TOTAL	313	100

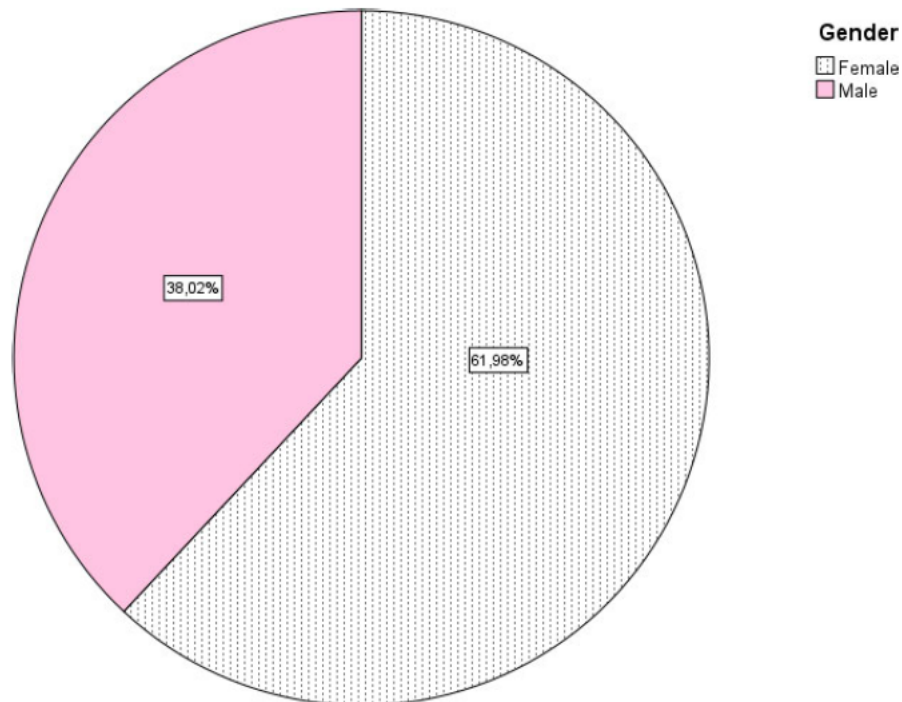


Figure 4.1: Gender distribution of the respondents (n = 313)

The racial distribution among respondents highlights a predominantly Black African (77.6%), followed by Indian (13.1%), Coloured (5.8%), and White (3.5%) (Table 4.2 and Figure 4.2).

Table 4.2: Race distribution of respondents (n = 313)

Race	Frequency	Percentage (%)
Black African	243	77.6
Coloured	18	5.8
Indian	41	13.1
White	11	3.5
TOTAL	313	100

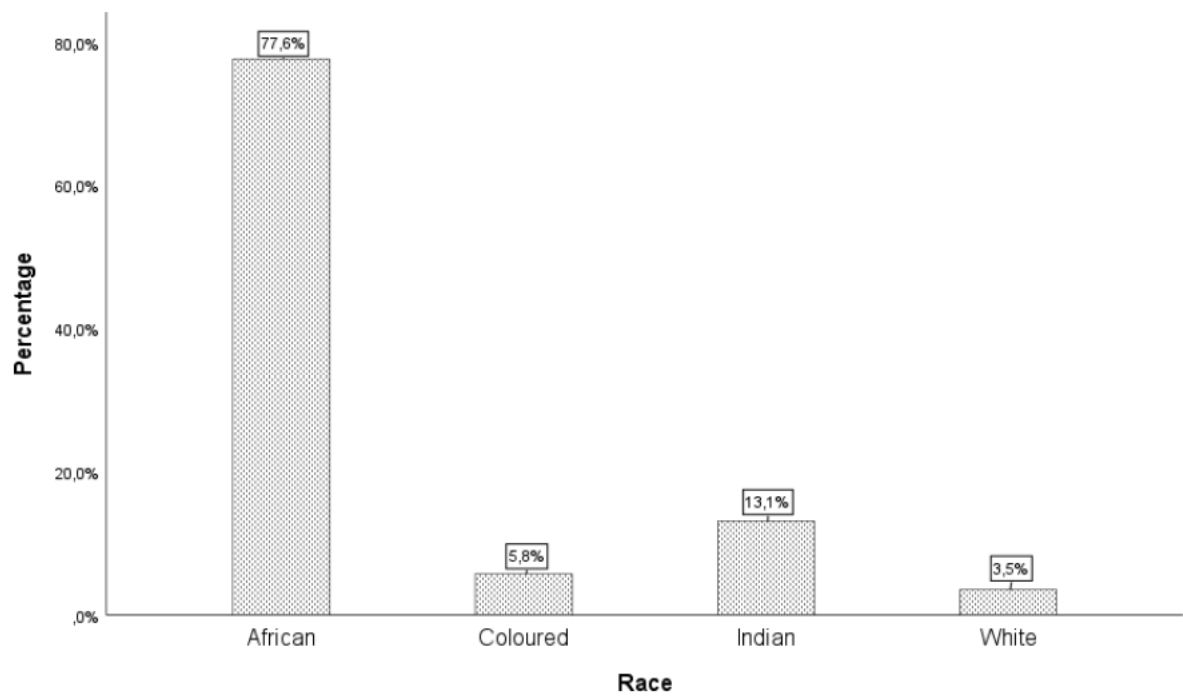


Figure 4.2: Race distribution of respondents (n = 313)

The results in Table 4.3 show that more than half (56.5%) of the respondents were between 20-25 years old, followed by those above 25 (41.2%) and 2.2% were below 20. This is also presented in Figure 4.3.

Table 4.3: Age group distribution of the respondents (n = 313)

Age group	Frequency	Percentage (%)
Below 20 years	7	2.2
20 - 25 years	177	56.5
Above 25 years	129	41.2
TOTAL	313	100

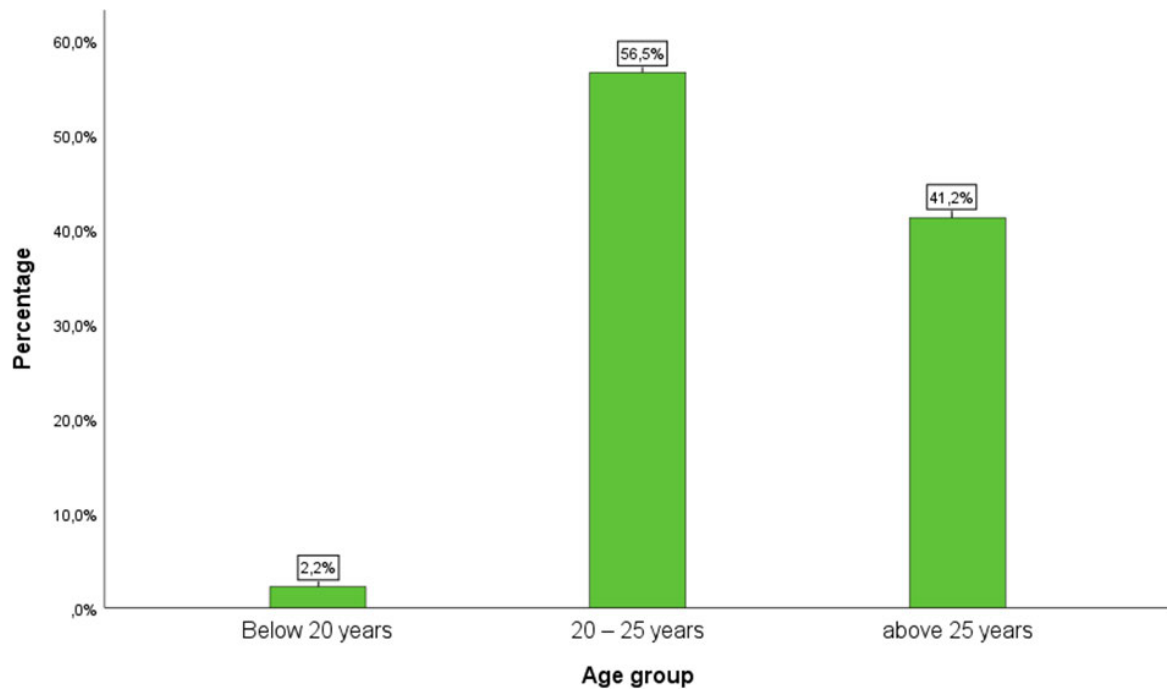


Figure 4.3: Age group distribution of the respondents (n = 313)

The table below (Table 4.5) presents the percentage of respondents per faculty and the level of qualification they have achieved. Most of the respondents were from the faculty of management sciences (26.5%) and the faculty of health sciences (25.6%). The researcher further observed that 56.9% of the respondents had a National Diploma, followed by those who had an Advanced Diploma (25.2%), Post-graduate Diploma (10.2%), master's degree (5.8%) and PhD (1.9%) (Table 4.5).

Most of the students from all faculties indicated that they had an opportunity to attend a WIL training course, and these results were found to be statistically significant (p -value = 0.020) when using the Chi-squared test. Furthermore, the results show that most of the students attended WIL training besides the qualification they have achieved. However, the Chi-squared test found these results not significant (p -value = 0.303). The Chi-Square Test is a technique of a non-parametric nature that assesses whether the rate of scores found on one or more nominal levels significantly differs from those expected based on theory (Bell and Water, 2018).

		Have you had the opportunity to attend any WIL training courses?		TOTAL	P- value
		No	Yes		
Faculty you belong to	Accounting and Informatics	3 (1.0)	14 (4.5)	17 (5.4)	0.020*
	Applied Sciences	-	47 (15.0)	47 (15.0)	
	Arts and Design	1 (0.3)	26 (8.3)	27 (8.6)	
	Built Environment and Engineering	2 (0.6)	57 (18.2)	59 (18.8)	
	Health Sciences	1 (0.3)	79 (25.2)	80 (25.6)	
	Management Sciences	4 (1.3)	79 (25.2)	83 (26.5)	
Qualification level	National Diploma	4 (1.3)	174 (55.6)	178 (56.9)	0.303
	Advanced Diploma	3 (1.0)	76 (24.3)	79 (25.2)	
	Post-graduate Diploma	2 (0.6)	30 (9.6)	32 (10.2)	
	Master's Degree	2 (0.6)	16 (5.1)	18 (5.8)	
	PhD	-	6 (1.9)	6 (1.9)	

Table 4.4: Cross-tabulation and Chi-squared test (n = 313)

4.3 RELIABILITY STATISTICS

According to Bell, Bryman, and Harley (2022), dependability is measurement equipment that consistently produces the same result from the same inputs. It is estimated by taking multiple measurements of the same subject. The Cronbach's alpha coefficient, a measure of item reliability, internal consistency, and construct stability (Nunnally and Bernstein, 1994), was determined. A reliability coefficient of 0.6 or greater than threshold of 0.7 is judged "acceptable" by Bagozzi and Yi's (1998), indicating a degree of consistency and reliability for data analysis.

Table 4.5 displays the Cronbach's alpha score for each item in the questionnaire. In all areas, Cronbach's alpha value was larger than the threshold of 0.6, indicating a degree of consistency and dependability for data analysis. The entire Cronbach's alpha was 0.988. Table 4.6 shows the Likert Scale questions covered in the questionnaire.

Table 4.5: Reliability statistics of the items in the questionnaire (n = 313)

Sections	Items	Cronbach's Alpha
B. Workplace learning	6	0.997
C. Practice on WIL	5	0.986
D. Attitude on WIL	11	0.991
Overall	22	0.988

4.4 RESPONDENTS' PERSPECTIVES ON WORK INTERGRATED LEARNING (WIL)

The following sections (B, C and D) provide the descriptive statistics on the Likert Scale questions. The researcher used frequency tables and graphs to present data. Each section provides results of the respondents' scoring patterns per variable. The sub-sections sought to establish whether students, in general, have related workplace learning skills; whether students are exposed to practice on WIL in higher institutions; and whether students have a positive attitude toward WIL.

Table 4.6: Presentation of questions asked per section (n = 313)

Sections	Items	Questions
B. Workplace learning skills	B1	Adaptability: I am adaptable, innovative, open, and resilient, especially when things don't go as planned.
	B2	Computer literacy: I understand and can utilize computers and related technology effectively.
	B3	Problem-solving: I am capable of learning, reasoning, creative thinking, decision-making, and issue-solving.
	B4	Team working, I can work in groups to achieve common goals.
	B5	Time management: I am skilled at arranging and aligning work and objectives to a timeline. It entails properly allocating time to the appropriate activity.
	B6	Critical thinking: I can study an issue, develop and implement a solution, and evaluate the plan's success.
C. Practice on WIL	C1	WIL and related activities are fully practised in the curriculum in my department.
	C2	The programme I am in provides assessment opportunities for WIL-related activities.
	C3	Lecturers in my profession have good working relationships with individuals from industries.
	C4	There are resources within the faculty to promote/support WIL activities.
	C5	I would benefit in WIL from working on small group projects with other students.
D. Attitude on WIL	D1	WIL will help me to think positively.
	D2	WIL in the undergraduate program will help graduates become better team members.
	D3	Communication skills should be acquired in integrated classes for undergraduate students.
	D4	It is not necessary for undergraduates to study together.
	D5	It is not necessary for undergraduates to study together with students from other professions.

	D6	WIL among students will improve their ability to comprehend more information.
	D7	WIL will help students recognize their professional constraints.
	D8	WIL among students will allow them to communicate more effectively with other professionals.
	D9	WIL will improve pupils' ability to understand crucial problems.
	D10	Teamwork skills are necessary for all pupils to develop.
	D11	Students in my discipline need to be trained and collaborate with other professionals.

4.4.1 SECTION B (WORKPLACE LEARNING SKILLS)

Table 4.7 shows the descriptive statistics to questions about workplace learning skills. The data are also shown graphically using a bar graph (see Figure 4.4). Most students, 265 (84.7%), agreed/strongly agreed that they are flexible, innovative, open, and resilient, especially when things do not go as planned (Statement B1), while 84.6% agreed/strongly agreed/strongly agreed that they have knowledge and ability to use computers and related technology efficiently (Statement B2). Table 4.7 also highlights that 85% of the respondents agreed/strongly agreed that they can learn, reason, think creatively, make decisions, and solve problems (Statement B3); they have the skills of organizing and aligning tasks and objectives into a schedule (Statement B5); and they can analyze an issue, generate and implement a solution, and assess the success of the plan (Statement B6). Furthermore, the results in Table 4.7 and Figure 4.4 reveal that most students (85.3%) agreed or strongly agreed that they can cooperate in groups to achieve common goals (Statement B4).

Table 4.7: Scoring patterns relating to Workplace learning skills (n = 313)

Items	Workplace learning skills	Responses	Response options				
			SD	D	NS	A	SA
B1	I am adaptable, imaginative, open, and resilient, especially when things don't go as planned.	Count	37	6	5	91	174
		Percentage	11.8	1.9	1.6	29.1	55.6
B2	I know how to use computers and related technology effectively.	Count	32	11	5	89	176
		Percentage	10.2	3.5	1.6	28.4	56.2
B3	I am capable of learning, reasoning, creative thinking, decision-making, and problem-solving.	Count	31	12	4	92	174
		Percentage	9.9	3.8	1.3	29.4	55.6
B4	I can work in groups to achieve common goals.	Count	31	11	4	91	176
		Percentage	9.9	3.5	1.3	29.1	56.2
B5	I am skilled in organizing and aligning work and objectives to a schedule. It entails properly allocating time to the appropriate activity	Count	35	9	3	88	178
		Percentage	11.2	2.9	1.0	28.1	56.9
B6	I can analyse an issue, generate and implement a solution, and assess the success of the strategy.	Count	33	10	4	88	178
		Percentage	10.5	3.2	1.3	28.1	56.9

- SD=Strongly disagree, D=Disagree, NS=Not sure, A=Agree, SA=Strongly agree

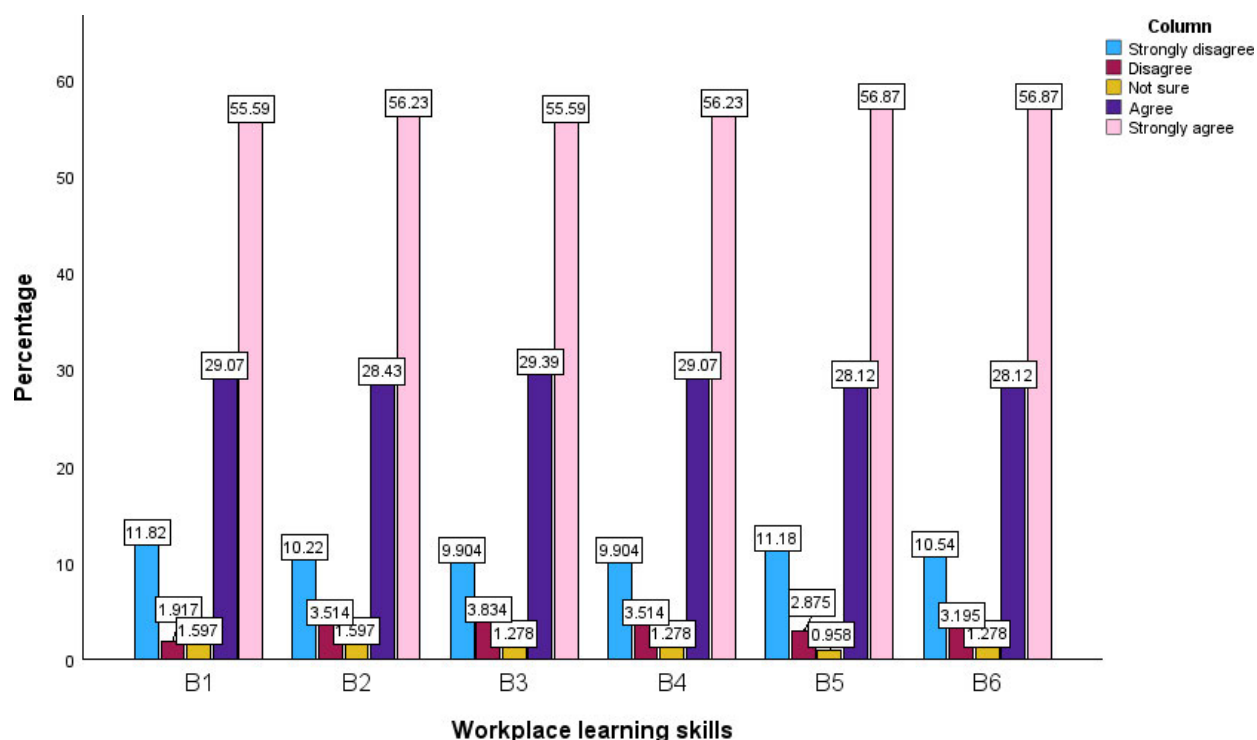


Figure 4.4: Scoring patterns relating to Workplace learning skills (n = 313)

4.4.2 SECTION C (PRACTICE ON WIL)

In this section, the researcher investigated the practices of WIL. The result is presented in by table (see Table 4.8). More than half of the students (58.1%) participated strongly agreed that WIL and related activities are fully practised in the curriculum from their academic departments (Statement C1), while 58.8% strongly agreed that the programme provides assessment opportunities for WIL-related activities (Statement C2). The researcher also observed that 170 students at 54.3% strongly agreed that academic lectures have a good working relationship with individuals from industries (Statement C3), while 58.5% believed that resources within the faculty are enough to promote and support WIL activities (Statement C 4). Furthermore, 185 (59.1 %) students strongly agreed that they benefited from WIL working on a small group project with other students (Statement C5).

Table 4.8: Scoring patterns relating to Practice on WIL (n = 313)

Items	Practice on WIL	Responses	Response options				
			SD	D	NS	A	SA
C1	WIL and related activities are fully practised in the curriculum in my department.	Count	19	4	11	97	182
		Percentage	6.1	1.3	3.5	31.0	58.1
C2	The programme I am in provides assessment opportunities for WIL-related activities.	Count	16	6	11	96	184
		Percentage	5.1	1.9	3.5	30.7	58.8
C3	Lecturers in my profession have good working relations with individuals from industries.	Count	22	3	15	103	170
		Percentage	7.0	1.0	4.8	32.9	54.3
C4	There are resources within the faculty to promote/support WIL activities.	Count	19	6	8	97	183
		Percentage	6.1	1.9	2.6	31.0	58.5
C5	I would benefit in WIL from working on small group projects with other students.	Count	18	5	8	97	185
		Percentage	5.8	1.6	2.6	31.0	59.1

- SD=Strongly disagree, D=Disagree, NS=Not sure, A=Agree, SA=Strongly agree

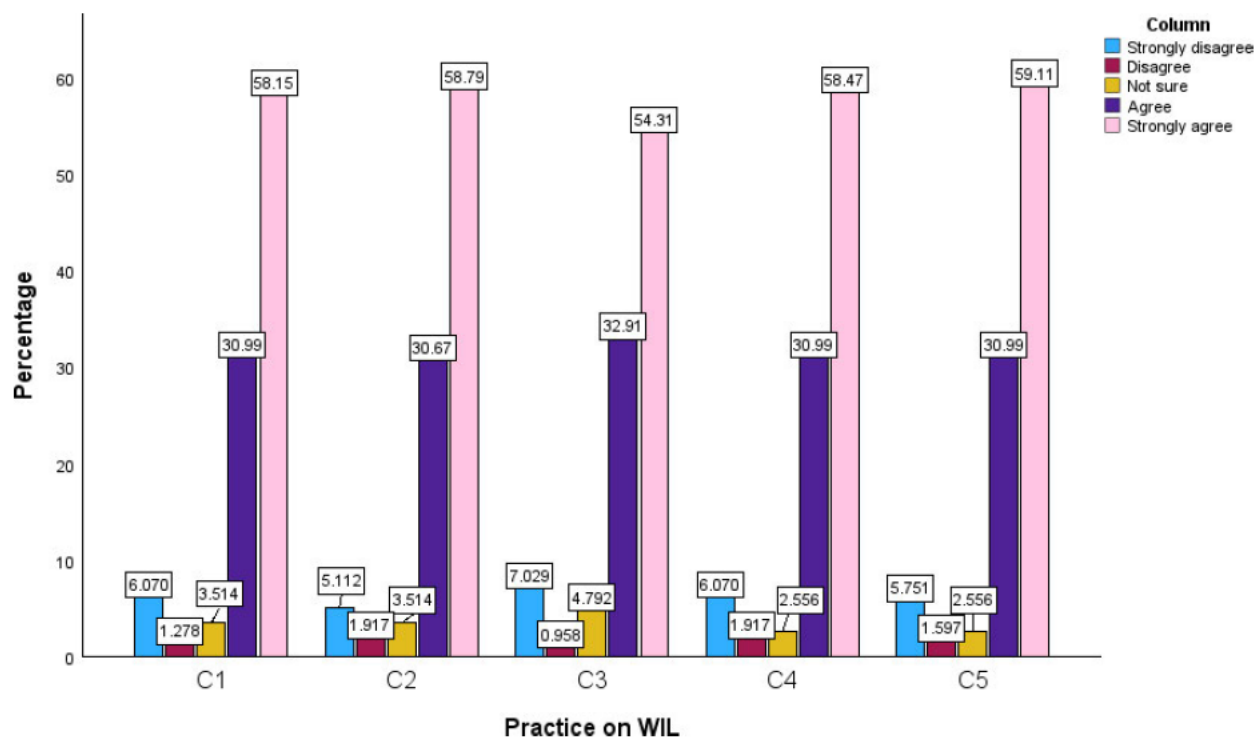


Figure 4.5: Scoring patterns relating to Practice on WIL (n = 313)

4.4.3 Section D (Attitude On WIL)

This section presents the scoring patterns relating to the attitude of WIL. These results are presented in Table 4.9 and Figure 4.6. The results showed that 189 (60.4%) of the students strongly agreed that WIL is helping students to think positively (Statement D1), while 187 (59.7%) strongly agreed that WIL in the undergraduate programme helps students to become better team workers (Statement D2). The majority 188 (60.1%) of the students felt that communication skills should be learned within the integrated class of undergraduate students (Statement D3). The results of this study indicate that more students (54.6%) strongly agreed that undergraduates don't need to learn together (Statement D4), and 58.1% strongly agreed that learning with students in other professional settings could help to become more effective individuals (Statement D5). About 91% of participants agreed/strongly agreed that WIL enhances student's ability to understand more things (Statement D6), WIL helps to understand limitations (Statement D7), WIL help students to communicate better with other professionals (Statement D8), WIL increase ability to understand critical problems (Statement D9), team-working skills are essential for all students to learn (Statement D10), and students from different discipline need to be trained and collaborated with other professionals (Statement D11).

Table 4.9: Scoring patterns relating to Attitude on WIL (n = 313)

Items	Attitude on WIL	Responses	Response options				
			SD	D	NS	A	SA
D1	WIL will help me to think positively.	Count	20	1	6	97	189
		Percentage	6.4	0.3	1.9	31.0	60.4
D2	WIL in the undergraduate programme will help the graduates to become better team-workers.	Count	14	7	8	97	187
		Percentage	4.5	2.2	2.6	31.0	59.7
D3	Communication skills should be learned within integrated classes of undergraduate students.	Count	19	2	6	98	188
		Percentage	6.1	0.6	1.9	31.3	60.1
D4	It is not necessary for undergraduates to learn together.	Count	17	9	21	95	171
		Percentage	5.4	2.9	6.7	30.4	54.6
D5	Learning with students in other professionals could help to become more effective individuals.	Count	18	3	7	103	182
		Percentage	5.8	1.0	2.2	32.9	58.1
D6	WIL among students will enhance their ability to understand more things.	Count	15	6	6	100	186
		Percentage	4.8	1.9	1.9	31.9	59.4
D7	WIL will help students to understand their professional limitations.	Count	20	4	5	100	184
		Percentage	6.4	1.3	1.6	31.9	58.8
D8	WIL among students will help them to communicate better with other professionals.	Count	17	5	5	99	187
		Percentage	5.4	1.6	1.6	31.6	59.7
D9	WIL among students will increase their ability to understand critical problems.	Count	18	3	6	97	189
		Percentage	5.8	1.0	1.9	31.0	60.4
D10	Team-working skills are essential for all students to learn.	Count	13	8	6	99	187
		Percentage	4.2	2.6	1.9	31.6	59.7
D11	Students in my discipline need to be trained and collaborate with other professionals.	Count	18	3	6	98	188
		Percentage	5.8	1.0	1.9	31.3	60.1

- SD=Strongly disagree, D=Disagree, NS=Not sure, A=Agree, SA=Strongly agree

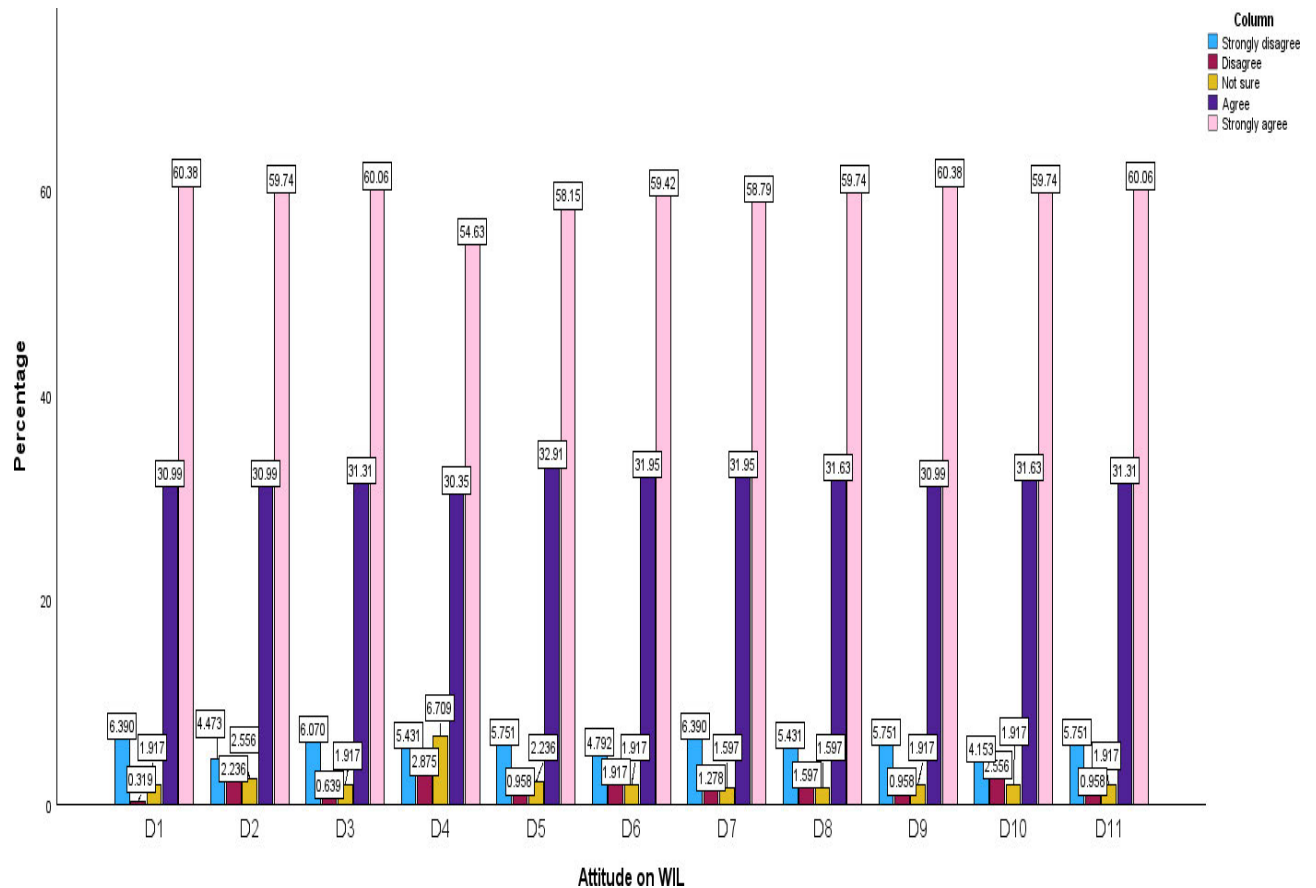


Figure 4.6: Scoring patterns relating to Attitude on WIL (n = 313)

4.5 HYPOTHESIS TESTING

The researcher of this study used inferential statistics to test hypotheses. Hypothesis is defined as the claim of the researcher's expectation or prediction about the relationship among study variables (Picardi and Masick, 2013). The main aim of hypothesis testing is to try to understand a statistically significant relationship that means the difference in result did not occur by chance but due to statistical reasons (Anupama, 2018). Previous authors such as Johnson and Gill (2010); and Schindler and Cooper (2006) stated that a hypothesis is formulated to be tested using empirical methodology before it can be rejected, revised or accepted. There are two types of hypotheses: the null hypothesis and the alternative hypothesis. A null hypothesis asserts that there is no statistically significant association between two variables, but an alternative hypothesis implies that there is a statistically significant relationship (Johnson and Gill, 2010). In this study, Spearman's rank correlation coefficient was utilized to quantify the relationship between two variables. The test was used since the variables' categories follow a natural

sequence (Kutner, Nachtsheim, Neter, and Li, 2005; Caruso and Cliff, 1997). The correlation analysis helped in determining the relationship between the independent variable and the dependent variable.

Table 4.10 presents correlations between the measured sections. The researcher found that Workplace learning skills and Practice on WIL are significantly positively correlated ($r_s = 0.695$, p-value <0.001). This suggests that Co-operative education plays a significant role in preparing students for professional skills, fostering a holistic learning environment that integrates theoretical knowledge with practical experience (see Table 4.10). The researcher further observed that there is a positive significant relationship between Workplace learning skills and Attitude on WIL ($r_s = 0.681$, p-value <0.001). Lastly, Practice on WIL and Attitude on WIL were also significantly positively related ($r_s = 0.828$, p-value <0.001).

Table 4.10: Spearman's Correlation Analysis (n = 313)

	Spearman's correlation r_s	N	P-value
Workplace learning skills ↔ Practice on WIL	0.695	313	$<0.001^*$
Workplace learning skills ↔ Attitude on WIL	0.681	313	$<0.001^*$
Practice on WIL ↔ Attitude on WIL	0.828	313	$<0.001^*$

*Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 1.

H_1 : Good relationships between lecturers and individuals from industries have a significant impact on students to have the ability to work in groups to pursue common goals.

Table 4.11: Relationship between the working together of lecturers and industries, and the impact they have on students to have the ability to work in groups to pursue common goals

Statements B4 and C3		B4	C3
Spearman's rho	B4	Correlation Coefficient	1
		Sig. (2-tailed)	0.607
		N	.<0.001*
	C3	Correlation Coefficient	0.607
		Sig. (2-tailed)	1
		N	.<0.001*

* Correlation is significant at the 0.05 level (2-tailed).

Table 4.11 above shows that Spearman's Rank Order Correlation Coefficient (r_s) was significant ($r_s = 0.607$; p-value <0.001). This implies that there is a significant relationship between the working together of lecturers and industries, and the impact they have to students to have the ability of working in groups to pursue common goals., the hypothesis is therefore accepted.

Hypothesis 2.

H_2 : There is a significant relationship between learning with students in other professions and thinking creatively, making decisions, and solving problems.

Table 4.12: Relationship between learning with students in other professions and thinking creatively, making decisions, and solving problems

Statements B4 and C3		B3	D5
Spearman's rho	B3	Correlation Coefficient	1
		Sig. (2-tailed)	0.693
		N	.<0.001*
	D5	Correlation Coefficient	0.693
		Sig. (2-tailed)	1
		N	.<0.001

* Correlation is significant at the 0.05 level (2-tailed).

The results in Table 4.12 above indicate that there is a significant relationship between learning with students in other professions and thinking creatively, making decisions, and solving problems ($r_s = 0.693$; p-value <0.001). Therefore, the hypothesis is also accepted.

Hypothesis 3.

H_3 : Resources within the Faculty to promote/support WIL activities being able to analyse a problem, generate and implement a solution, and assess the success of the plan are significantly related.

Table 4.13: Relationship between resources within the faculty to promote/support WIL activities and being able to analyse a problem, generate and implement a solution, and assess the success of the plan

Statements B6 and C4		B6	C4
Spearman's rho	B6	Correlation Coefficient	1
		Sig. (2-tailed)	. <0.001*
		N	313
	C4	Correlation Coefficient	0.686
		Sig. (2-tailed)	<0.001*
		N	313

* Correlation is significant at the 0.05 level (2-tailed).

Table 4.13 highlights a highly significant relationship between resources within the faculty to promote/support WIL activities and being able to analyse a problem, generate and implement a solution, and assess the success of the plan, where $r_s = 0.686$ and p-value <0.001 . Hence, the hypothesis was accepted.

4.6 FACTOR ANALYSIS (FA)

The goal of factor analysis is to identify items/statements that are related in such a way that they have comparable responses and measure the same factor or dimension. In other words,

FA is a multivariate statistical technique used with a single set of variables to determine which variables form logical subsets that are substantially independent (Tabachnick and Fidell, 1983). Previous researchers investigated and explored the use of factor analysis to minimize big datasets and identify the factors derived from the investigation (Bartlett, 1951; Cerny and Kaiser, 1977). According to Wilson (2014), factor analysis is performed on a group of items and results in a factor-loading matrix as the principal output. The data's factorability can be assessed using two statistical measures: the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (BTS).

Table 4.14 shows KMO statistics values larger than 0.5 in all sections, indicating acceptable sampling and appropriate factor analysis for the data. The p-values for Bartlett's Test of Sphericity (BTS) were less than 0.05 in all areas. It signifies that the null hypothesis, which states that all correlation matrices are identical matrices with all diagonal elements 1 and off-diagonal elements 0, was rejected, implying that all variables are uncorrelated. To be more exact, the variables are not orthogonal. A p-value < 0.05 suggests that factor analysis may be beneficial for the data set.

Table 4.14: Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test (n = 313)

Sections	Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	Barlett's Test of Sphericity (BTS)		
		Approx. Chi-Square	df	Sig.
B. Workplace learning skills	0.939	5677.52	15	<0.001*
C. Practice on WIL	0.916	3059.26	10	<0.001*
D. Attitude on WIL	0.937	9606.61	55	<0.001*
Overall	0.943	19910.67	231	<0.001*

Factor loading entails a correlation between a factor extracted from the data and a variable. The loadings are correlations between factors and items. Normally, large values serve as indicators in which such items are grouped to a particular factor. Tables 4.12, 4.13, and 4.14 show the rotated component matrix for each part.

This work used principal component analysis to extract data and varimax with Kaiser normalization to perform orthogonal rotations. The statements that made up Workplace learning skills (Table 4.15), Practice on WIL (Table 4.16), and Attitude on WIL (Table 4.17) loaded perfectly with a single component. This means that the statements comprising these parts precisely measured what they set out to measure.

Table 4.15: Rotated component matrix of workplace learning skills (n = 313)

Workplace learning skills	Component 1
Adaptability: is as being adaptable, innovative, open, and resilient, especially when things do not go as planned.	0.991
Computer literacy: is the knowledge and ability to utilize computers and related technology effectively.	0.990
Problem-solving: is the ability to learn, reason, think creatively, make decisions, and solve difficulties.	0.990
Team working: The capacity to work in groups to achieve common goals.	0.991
Time management: is the ability to organize and coordinate your responsibilities and objectives into a schedule. It entails efficiently managing your time so that the right time is dedicated to the right task.	0.992
Critical thinking: is the talent of understanding a problem, developing and implementing a solution, and assessing the success of the strategy.	0.995

Table 4.16: Rotated component matrix for Practice on WIL (n = 313)

Practice on WIL	Component 1
WIL and related activities are fully practised in the curriculum in my department.	0.974
The programme I am in provides assessment opportunities for WIL-related activities.	0.979
Lecturers in my profession have good working relationships with individuals from industries.	0.954

There are resources within the faculty to promote/support WIL activities.	0.979
I would benefit in WIL from working on small group projects with other students.	0.984

Extraction Method: Principal Component Analysis.

- a. 1 component extracted.

Table 4.17: Rotated component matrix for Attitude on WIL (n = 313)

Attitude on WIL	Component
	1
WIL will help me to think positively.	0.982
WIL in the undergraduate programme will help the graduates to become better team-workers.	0.980
Communication skills should be acquired in integrated classes for undergraduate students.	0.978
It is not necessary for undergraduates to study together.	0.733
Learning alongside students from diverse professions may help you become a more effective individual.	0.982
WIL among students will improve their ability to comprehend more information.	0.988
WIL will help students recognize their professional constraints.	0.969
WIL among students will allow them to communicate more effectively with other professionals.	0.988
WIL will improve pupils' ability to understand crucial problems.	0.986
Teamwork skills are necessary for all pupils to develop.	0.986
Students in my discipline need to be trained and collaborate with other professionals.	0.983

Extraction Method: Principal Component Analysis.

- a. 1 component extracted.

4.7 SUMMARY

This chapter analyses and presents data from a survey questionnaire sent to DUT students, focusing on workplace learning skills (WIL) and attitudes towards it. The survey was divided into four sections, with questions measuring biographic data, workplace learning skills, practice on WIL, and attitude on WIL. The data was analysed using SPSS version 29.02, with a p-value < 0.05 considered statistically significant. The study examines qualitative aspects of Co-op initiatives at DUT, focusing on their effectiveness in equipping students with essential professional skills. The quantitative data analysis examines the demographic composition of respondents, key role players involved in supporting WIL implementation, and students' attitudes towards WIL. The next chapter presents the study's findings, evaluates the extent to which the research objectives were met, and outlines the conclusions drawn from the analysis. It also provides recommendations based on the findings and suggests directions for future research.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the key findings from the theoretical and empirical components of the study, assesses the extent to which the research objectives were achieved, and presents the conclusions drawn from the analysis. It offers recommendations based on the findings and proposes directions for future research.

5.2 SUMMARY OF THEORETICAL STUDY

The theoretical study aimed to establish a comprehensive framework for understanding the research problem by examining existing literature, theories, and models relevant to the topic. This section presents the key theoretical insights that guided the empirical investigation.

5.2.1 RESEARCH PROBLEM AND CONTEXT

Today's public and private industries demand professional skills for every entry-level job post. The South African Department of Public Service and Administration's job advertisements for recent graduates emphasize the need for professional skills. McMurray, McQuaid, and Richard (2016), highlight work placements as a crucial link for undergraduates and graduates to the labour market, facilitating the development of professional skills. At the Durban University of Technology (DUT), students can gain and develop these skills through Co-operative Education work-integrated learning (WIL) placements in relevant industries. According to Dwesini (2019), employability skills development is required for new graduates to succeed in the job; this development is frequently viewed as being assisted by WIL. As a result, the WIL cooperation between the institution and business provides an opportunity for both parties to create close relationships for recruitment purposes.

5.2.2 KEY CONCEPTS AND DEFINITIONS

The study begins by establishing key terminology and concepts crucial to the investigation.

- Co-operative teaching is a systematic approach that combines classroom teaching with actual work experience.
- Work-Integrated Learning (WIL) combines theoretical learning with practical applications in the workplace.

- **Skills Development:** The process of discovering and developing the talents necessary for a certain job.
- **Real-life experiences:** In a professional atmosphere, you will obtain practical experience.
- **Professional skills:** Communication, leadership, time management, adaptability, and professionalism are among the skills required to function well in a professional setting.

These terms are described in Chapter One.

5.2.3 THEORETICAL FRAMEWORKS

Kolb's (1984) experiential learning theory was chosen as the framework for this research. This theory explains how individuals learn through experience, which is particularly relevant for understanding the role of Co-operative Education in preparing DUT students for professional skills.

5.2.4 LITERATURE REVIEW

The literature review encompassed a broad range of studies and publications related to the research topic. Key findings include:

- **Co-operative Education and WIL**

Definitions and the role in promoting academic performance, enhancing communication and leadership skills, and fostering effective teamwork among students.

- **DUT Strategy Envision 2030**

Focuses on the university's strategic goals related to skills development and employment readiness. The strategy emphasizes the DUT's responsibility of educating and training knowledgeable and capable graduates who are equipped with the necessary employability, graduate, and entrepreneurial attributes to adapt and succeed in an evolving labour market and knowledge-driven society, and to fulfil the economic needs of broader society through community engagement and partnerships (DUT, 2021).

- **South African Skills Development Act of 1998 and National Skills Development Strategy**

Highlights the government's role in providing an institutional framework to develop and improve the skills of the workforce.

5.2.5 CURRENT TRENDS AND DEBATES

a. The Phasing Out of WIL and Its Implications

In recent years, there has been a noticeable trend at the Durban University of Technology (DUT) where some programs are phasing out Work-Integrated Learning (WIL) from their curriculum. This trend has sparked debates among educators, industry professionals, and policymakers regarding the necessity and impact of Co-operative Education on students' readiness for the workforce.

b. The Necessity of Co-operative Education

Co-operative Education, which integrates academic learning with practical work experience, is crucial for several reasons

- **Real-Life Experience**
- It provides students with hands-on experience in real-world settings, enabling them to apply theoretical knowledge in practical scenarios.
- **Skill Development**

It helps in the development of essential professional skills such as communication, leadership, teamwork, problem-solving, and adaptability.

- **Employment Readiness**

Students who participate in Co-op programs are often more prepared for the demands of the job market. They have a better understanding of workplace dynamics and expectations.

- **Networking Opportunities**

It allows students to build professional networks, which can be valuable for future job prospects.

c. Evidence Supporting Co-operative Education

Research and empirical studies support the effectiveness of Co-operative Education in enhancing students' professional skills and employability

- **Enhanced Academic Performance**

Studies have shown that students involved in WIL programs often perform better academically due to the practical context provided by their work experience.

- **Student Success Stories**

Testimonials from WIL alumni highlight the significant impact of WIL on their career paths, underscoring the importance of practical experience.

d. Phasing Out WIL: Concerns and Implications

Despite the clear benefits, some DUT programs are discontinuing WIL, leading to several concerns

- **Skill Gap:** Without WIL, students may graduate lacking critical professional skills and real-world experience, making them less competitive in the job market.
- **Reduced Employability,** graduates without practical experience may struggle to secure employment, as employers increasingly seek candidates with demonstrated experience.
- **Missed Opportunities,** students miss out on networking and mentorship opportunities that WIL placements often provide.

e. The Need to Reintroduce and Emphasize Co-op Programs

Given the evidence supporting the value of Co-operative Education, there is a strong case for reintroducing and emphasizing Co-op programs at DUT

- **Aligning with Industry Needs**

Reinforcing Co-op programs would ensure that graduates possess the skills and experience demanded by employers in both public and private sectors.

- **Enhancing Academic Curriculum**

Integrating practical experience within the academic curriculum enriches the learning process, making it more dynamic and relevant.

- **Supporting National Strategies**

Reintroducing WIL aligns with national strategies such as the South African Skills Development Act and the National Skills Development Strategy, which aim to improve workforce skills and employability.

- **Institutional Commitment**

DUT should commit to providing adequate resources and support for Co-op programs, ensuring their effective implementation and sustainability.

f. Addressing Challenges

To successfully reintroduce and emphasize Co-op programs, several challenges need to be addressed

- **Resource Allocation**

Ensuring sufficient resources, including funding, staff, and infrastructure, to support WIL activities.

- **Industry Partnerships**

Strengthening partnerships with industry to secure quality placements for students.

- **Curriculum Integration**

Developing a curriculum that seamlessly integrates WIL with academic coursework.

- **Monitoring and Evaluation**

Implementing robust mechanisms to monitor and evaluate the effectiveness of Co-op programs, ensuring continuous improvement.

The current trend of phasing out WIL from some DUT courses is concerning, given the clear benefits of Co-operative Education in preparing students for the workforce. There is a compelling need to reintroduce and emphasize Co-op programs to bridge the experience gap for DUT graduates, ensuring they are equipped with the necessary skills and practical experience to succeed in their careers. By addressing the challenges and leveraging the benefits of WIL, DUT can enhance its educational offerings and better serve its students and the broader community.

5.3 REALISATION OF RESEARCH OBJECTIVES

The major goal of this study was to assess the influence of Co-operative Education programs on student learning and professional skill acquisition at Durban University of Technology (DUT). The research aims were to investigate the impact of Co-operative Education on students, specifically in terms of practical experience, professional skill development, and active experimentation during Work-Integrated Learning (WIL).

5.3.1 CONCRETE EXPERIENCE THROUGH WIL

One of the key objectives was to investigate the practices and implementation of WIL in the curriculum. The results from the study, as presented in Table 4.8, (Chapter 4) show that a

significant proportion of students acknowledged the integration of WIL in their academic programs. Specifically:

- **58.1% of students strongly agreed that WIL and related activities are fully practised in the curriculum (Statement C1)**, indicating a strong presence of practical learning opportunities.
- **58.8% of students strongly agreed that the program provides assessment opportunities for WIL-related activities (Statement C2)**, highlighting the structured evaluation of practical skills.
- **54.3% of students strongly agreed that academic lecturers maintain good working relationships with industry professionals (Statement C3)**, which facilitates relevant and effective WIL experiences.
- **58.5% of students believed that the resources within the faculty are adequate to promote and support WIL activities (Statement C4)**, showing institutional support for practical learning.
- **59.1% of students strongly agreed that they benefited from working on small group projects with other students (Statement C5)**, emphasizing collaborative and practical learning experiences.

These findings confirm that the objective of providing concrete experience through WIL is being realized, with students actively engaging in practical, real-world tasks that enhance their learning.

5.3.2 DEVELOPMENT OF PROFESSIONAL SKILLS

The study also aimed to assess the development of professional skills among students participating in Co-operative Education programs. As indicated in Table 4.7 and illustrated by the bar graph in Figure 4.4, the results are promising:

- **84.7% of students agreed/strongly agreed that they are flexible, innovative, open, and resilient (Statement B1)**, showcasing adaptability and problem-solving skills.
- **84.6% of students agreed/strongly agreed that they possess knowledge and ability to use computers and related technology efficiently (Statement B2)**, highlighting technical proficiency.

- **85% of students agreed/strongly agreed that they can learn, reason, think creatively, make decisions, and solve problems (Statement B3),** which are critical cognitive skills.
- **85% of students agreed/strongly agreed that they have skills in organizing and aligning tasks and objectives into schedules (Statement B5),** reflecting strong organizational abilities.
- **85% of students agreed/strongly agreed that they have skills in analysing problems, generating and implementing solutions, and assessing success (Statement B6),** indicating comprehensive problem-solving skills.
- **85.3% of students agreed/strongly agreed that they can work effectively in groups to pursue common goals (Statement B4),** underscoring teamwork and collaboration skills.

These statistics demonstrate that the objective of developing professional skills through Co-operative Education is being effectively met, with a high percentage of students reporting significant skill enhancement.

5.3.3 ACTIVE EXPERIMENTATION DURING WIL

The objective of facilitating active experimentation and positive attitudes towards WIL was also investigated. The findings indicate a strong positive impact:

- **60.4% of students strongly agreed that WIL helps them think positively (Statement D1).**
- **59.7% of students strongly agreed that WIL helps them become better team workers (Statement D2).**
- **60.1% of students felt that communication skills should be learned within integrated classes of undergraduate students (Statement D3).**
- **54.6% of students strongly agreed that it is not necessary for undergraduates to learn together (Statement D4),** suggesting diverse views on interdisciplinary learning.
- **58.1% strongly agreed that learning with students in other professional settings could help them become more effective individuals (Statement D5).**

- **91% of participants agreed/strongly agreed that WIL enhances their ability to understand complex concepts (Statement D6), helps them understand their limitations (Statement D7), improves their communication with other professionals (Statement D8), increases their ability to understand critical problems (Statement D9), and underscores the importance of team-working skills (Statement D10).**

These results provide strong evidence that students have positive and constructive experiences during WIL, fulfilling the objective of promoting active experimentation and practical learning. the study successfully realized its research objectives by demonstrating the significant impact of Co-operative Education programs on student learning and the acquisition of professional skills at DUT. The findings underscore the importance of WIL in providing concrete experiences, developing essential professional skills, and promoting active experimentation, thereby preparing students for the demands of the workforce.

5.3.4 TOP OF FORM BOTTOM OF FORM METHODOLOGICAL AND EMPIRICAL SUMMARY

The theoretical study informed the choice of research methodology, which includes a mixed-methods approach. Data analysis, as defined by Azungah (2018), involves the systematic interpretation of data collected. Descriptive data was presented using pie charts, bar graphs and tables. This approach aims to provide a comprehensive understanding of the research findings, integrating both descriptive and inferential statistics.

5.4 CONCLUSIONS

The conclusions derived from the findings are as follows:

- **Effective Integration of WIL in Curriculum**

The study found that most students acknowledged the comprehensive integration of Work-Integrated Learning (WIL) activities in their academic programs. This indicates that DUT has successfully embedded practical learning opportunities within the curriculum, providing students with valuable real-world experiences that enhance their academic and professional development.

- **Strong Institutional Support for WIL**

The results revealed that academic departments and faculties at DUT have a robust framework and sufficient resources to support WIL activities. Bae, Polmear and Simmons (2020) agreed that the positive relationships between academic lecturers and industry professionals further bolster the effectiveness of these programs, ensuring that students receive relevant and impactful training.

- **Development of Critical Professional Skills**

Co-operative Education programs at DUT significantly contribute to the development of essential professional skills among students (Raghubar, 2021). High percentages of students reported improvements in flexibility, innovation, technical proficiency, creative thinking, decision-making, problem-solving, organizational skills, and teamwork. These skills are critical for their future careers and align with industry demands.

- **Positive Attitudes Towards WIL**

The study highlighted that students have a positive perception of WIL, recognizing its benefits in fostering teamwork, enhancing communication skills, and promoting interdisciplinary collaboration. Most students agreed that WIL helps them think positively, understand their limitations, communicate effectively with professionals from other fields, and tackle complex problems.

- **Preparation for Workforce Demands**

The findings underscore the importance of WIL in preparing students for the workforce. Through active experimentation and practical learning, students gain hands-on experience that is crucial for their professional readiness. Prianto, Qomariyah, and Firman (2022) also confirm that this preparation aligns with the demands of both public and private sectors, ensuring that graduates are equipped with the necessary skills to succeed in their careers.

The study successfully realized its research objectives by demonstrating the significant impact of Co-operative Education programs on student learning and the acquisition of professional skills at DUT. The findings emphasize the critical role of WIL in providing concrete experiences, developing essential professional skills, and promoting active experimentation, thereby effectively preparing students for the demands of the workforce. These conclusions address the research questions and provide a coherent synthesis of the study's outcomes.

5.5 RECOMMENDATIONS BASED ON FINDINGS

Based on the study's conclusions, numerous recommendations are offered to improve the effectiveness of Co-operative Education programs and Work-Integrated Learning (WIL) at Durban University of Technology (DUT):

5.5.1 Enhance Integration and Coordination

Recommendation

Strengthen the integration of WIL activities across all academic departments at DUT. Ensure that these activities are aligned with industry needs and contribute directly to the development of professional skills.

Rationale

Improved integration will provide students with consistent and meaningful practical experiences, enhancing their readiness for the workforce.

5.5.2 Expand Industry Partnerships

Recommendation

Foster and expand partnerships between academic departments and industry stakeholders. Encourage regular interaction, joint projects, and collaborative initiatives to enrich student learning experiences.

Rationale

Stronger partnerships will ensure WIL activities remain relevant and reflect current industry practices, enhancing the employability of DUT graduates.

5.5.3 Invest in Faculty Development

Recommendation

Provide training and professional development opportunities for academic lecturers to enhance their engagement with WIL activities. Emphasize the importance of mentorship and guidance for students during their practical learning experiences.

Rationale

Well-prepared faculty members can better support students throughout their WIL journey, ensuring quality learning outcomes and effective skills development.

5.5.4 Promote Interdisciplinary Collaboration

Recommendation

Encourage interdisciplinary collaboration among students from different faculties or disciplines during WIL activities. Create platforms for cross-disciplinary projects and teamwork to foster innovation and holistic skill development.

Rationale

Interdisciplinary collaboration prepares students to work effectively in diverse professional settings, equipping them with adaptable skills that are crucial in today's workforce.

5.5.5 Enhance Monitoring and Evaluation

Recommendation

Implement robust mechanisms for monitoring and evaluating the effectiveness of WIL programs. Regularly assess student outcomes, feedback from industry partners, and alignment with learning objectives to continuously improve program quality.

Rationale

Continuous evaluation ensures that WIL programs remain responsive to evolving educational and industry needs, maintaining their relevance and impact over time.

5.5.6 Expand Support Services for Students

Recommendation

Strengthen support services for students participating in WIL activities, including career counselling, mentorship programs, and resources for personal and professional development.

Rationale

Comprehensive support services contribute to positive student experiences during WIL, enhancing their learning outcomes and overall satisfaction with the program.

5.5.7 increased Awareness and Marketing

Recommendation

Enhance marketing efforts to raise awareness among students, faculty, and industry stakeholders about the benefits of WIL programs. Highlight success stories, testimonials, and the impact of practical learning on graduates' career readiness.

Rationale

Increased awareness attracts more industry partnerships, encourages student participation, and strengthens institutional commitment to WIL as a cornerstone of DUT's educational strategy. These recommendations are designed to leverage the strengths identified in the study and address areas for improvement, ensuring that Co-operative Education programs at DUT continue to enhance student learning outcomes and prepare graduates for successful careers in their chosen fields. These recommendations are aimed at stakeholders who can benefit from the research findings and are intended to inform policy, practice, or further research.

5.6 SUGGESTIONS FOR FURTHER RESEARCH

Given the scope and limitations of the current study, the following areas are suggested for further research

- **Longitudinal Study on Career Outcomes**

Conduct a longitudinal study to track the career trajectories and employment outcomes of DUT graduates who participated in Co-operative Education programs. This would provide insights into the long-term impact of WIL on graduates' careers and their ability to meet industry demands over time.

- **Comparative Analysis Across Institutions**

Extend the research to include graduates from other institutions and compare their experiences with those of DUT graduates. This comparative analysis could highlight institutional differences in WIL implementation and outcomes, offering valuable insights for program improvement.

- **Impact of COVID-19 on WIL Programs**

Investigate the specific impacts of the COVID-19 pandemic on Co-operative Education programs and graduates' experiences. Explore how virtual or hybrid WIL models implemented during the pandemic have influenced skill development and industry readiness.

- **Employer Perspectives on Graduate Skills**

Conduct research that includes perspectives from employers to assess the alignment between the skills developed through WIL and the skills demanded by the industry. This would provide a comprehensive view of the effectiveness of Co-operative Education in meeting industry needs.

- **Enhancing WIL Program Effectiveness**

Explore strategies to enhance the effectiveness of Co-operative Education programs, such as innovative curriculum designs, enhanced industry partnerships, and integrated support services for students. Evaluate the impact of these strategies on student learning outcomes and career preparedness.

- **Evaluation of Mentorship and Guidance**

Investigate the role of mentorship and guidance provided during WIL experiences in facilitating skill development and professional growth among students. Assess best practices in mentorship and their impact on student outcomes.

- **Cross-Disciplinary WIL Experiences**

Examine the benefits and challenges of cross-disciplinary WIL experiences where students from different fields collaborate on projects. Evaluate how these experiences contribute to holistic skill development and interdisciplinary collaboration.

- **Long-term sustainability of WIL Programs**

Examine the factors that lead to the long-term viability of WIL programs at higher education institutions. Identify difficulties and best practices for sustaining effective WIL efforts amidst shifting educational and economic settings.

By addressing these issues in future studies, researchers and institutions can improve their understanding and execution of Co-operative Education and Work-Integrated Learning, ensuring that graduates are well-prepared to succeed in the competitive workplace. These proposals are intended to fill gaps highlighted in the current study and to investigate new elements of the research issue.

5.7 SUMMARY

In conclusion, this chapter synthesized the study's theoretical and empirical findings, assessed the achievement of research objectives, drew conclusions, and provided actionable recommendations and future research paths. The findings from this study add significantly to the existing body of information and have practical consequences for key parties.

This study aimed to assess the influence of Co-operative Education (Co-op) programmes on student learning and professional skill acquisition at DUT. Utilizing a mixed-methods

approach, the research combined quantitative data from online questionnaires and qualitative insights from interviews to provide a comprehensive analysis of the impact of WIL. The literature highlights the crucial role of practical experience in education, aligning with national strategies such as the South African Skills Development Act, which emphasizes the need for improved workforce skills and employability. Data analysis revealed that a significant proportion of students recognized the integration of WIL within their academic programs, with 58.1% strongly agreeing that WIL is effectively embedded in their curricula. 84.7% reported enhanced professional skills, showcasing the programme's effectiveness in preparing graduates for industry demands.

Students expressed positive attitudes towards WIL, emphasizing its role in developing teamwork, communication skills, and problem-solving abilities. The findings underscore the importance of institutional support for WIL initiatives, suggesting that robust faculty-industry relationships and resource allocation are vital for success. The study illustrates that Co-op programmes significantly enrich the educational experience at DUT, equipping students with essential skills and practical knowledge for their future careers. The recommendations for improved integration, enhanced industry partnerships, and ongoing evaluation aim to further strengthen WIL programmes, ensuring they remain responsive to evolving workforce needs and continue to provide meaningful learning experiences.

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APPENDIX 1:

Letter of information



LETTER OF INFORMATION

Title of the Research Study: Role of Co-operative Education in preparing students for professional skills at the Durban University of Technology

Dear [Participant's Name],

I hope this letter finds you well. My name is Ndukenhle Mathe, and I am currently pursuing my master's degree in public management and economics at Durban University of Technology (DUT). I am writing to extend an invitation to you to participate in an important research study that I am conducting as part of my academic endeavours.

Title of the Research Study: Role of Co-operative Education in Preparing Students for Professional Skills at the Durban University of Technology

Principal Investigator/Researcher: Mr. Ndukenhle Innocent Mathe, Bachelor of Technology in Public Management and Economics

Co-Investigator/Supervisor: Dr. SS Pillay, PhD in Administration

Brief Introduction and Purpose of the Study:

Professional skills play a crucial role in the recruitment process for various industries. Work placements have been identified as a vital link for undergraduates and graduates to enter the labour market while developing these professional skills (McMurray, McQuaid, and Richard, 2016). The primary objective of my study is to investigate the impact of co-operative education programs on student learning and the acquisition of professional skills at Durban University of Technology. Specifically, I aim to evaluate the extent to which co-operative education provides students with concrete experiences, enhances their professional skills, and encourages active experimentation during Work Integrated Learning.

Outline of the Procedures:

Your participation in this research is highly valued. Before deciding whether to participate, I kindly request you to carefully review this information sheet. Should you choose to participate, I would like to express my gratitude. If you decide not to participate, please know that this decision will in no way

disadvantage you, and I sincerely appreciate your consideration.

As part of this study, you will be asked to complete a questionnaire, which will take approximately 15-20 minutes to complete. You can complete the questionnaire at your preferred location and return it within 5 working days. Please be aware that you have the option to withdraw from the project at any time, and this decision will not have any adverse consequences.

Risks or Discomforts to the Participant:

This research involves Likert scale questionnaires, and no risks or discomforts are anticipated during the questionnaire completion process.

Withdrawal from the Study:

Your participation in this study is entirely voluntary, and you can withdraw your participation at any time without any adverse outcomes.

Benefits:

While there is no financial benefit associated with participating in this study, your contribution can aid in bridging the gap between academia and industry. This research aims to assist students in developing the skills and experiences needed to succeed in their careers and address the skills gap present in the current job market.

Remuneration:

Participation in this study is entirely voluntary, and no financial compensation is provided for any services or information provided.

Costs of the Study:

You will not incur any costs during your participation in this study.

Confidentiality:

I want to assure you that all responses and data provided will be treated with the utmost confidentiality and will only be used for research purposes. Your identity will remain anonymous, and data cannot be linked to a specific individual. The data collected will be securely stored and accessible only to the researcher.

Results:

The results of this study will be published in a scientific journal or other relevant outlets.

Research-related Injury:

I want to emphasize that your participation will not result in any harm or injury.

Storage of Data:

Data will be stored electronically, online, on a secure cloud file, accessible only through a password-protected email. Data will be retained for a period of 5 years, and at the conclusion of the study, it will be disposed of appropriately, following ethical guidelines and DUT regulations.

Contact Information:

If you have any questions, concerns, or encounter any issues related to the study, please feel free to contact me at 0649506601. You can also reach out to my supervisor, Dr. SS Pillay, at 0313736861, or the DUT Institutional Research Ethics Administrator at 031 373 2375. For complaints, please contact the Acting Director: Research and Postgraduate Support at researchdirector@dut.ac.za.

Your participation in this research would be greatly appreciated, and your input is invaluable to the success of this study. Thank you for considering this invitation, and I hope you will choose to participate.

Sincerely,

Ndukenhle

APPENDIX 2:

Letter of Consent



CONSENT

Statement of Agreement to Participate in the Research Study:

I hereby confirm that I have been informed by the researcher, **Mathe Ndukenhle**, about the nature, conduct, benefits, and risks of this study - Research Ethics Clearance Number:

I have also received, read, and understood the above written information (Participant Letter of Information) regarding the study.

I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report. In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher. May, at any stage, without prejudice, withdraw my consent and participation in the study.

I have had sufficient opportunity to ask questions and (of my own free will) declared myself prepared to participate in the study.

I understand that significant new findings developed during this research which may relate to my participation will be made available to me.

Full Name of Participant

Date Time

Signature /Right Thumbprint

I, _____ (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher

Date

Signature

Full Name of Witness (If applicable)

Date

Signature

Full Name of Legal Guardian (If applicable)

Date

Signature

APPENDIX 3:

Request for permission to conduct research

21/09/2023

DR V Govender

Acting Director Research and Postgraduate Support

DUT Steve Biko Campus

P O Box 1334

Durban

400

Tel: 031 373 2912

Email: researchdirector@dut.ac.za

Request for Permission to Conduct Research

Dear Dr V Govender

My name is Ndukenhle Innocent Mathe, a Public Management and Economics student at the Durban University of Technology. The research I wish to conduct for my Masters dissertation involves the Role of Co-operative Education in preparing students for professional skills at the Durban University of Technology.

I am hereby seeking your consent to conduct research at Durban University of Technology.

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact me on 0649506601 and 21435968@dut4life.ac.za. Thank you for your time and consideration in this matter.

Yours sincerely,

Ndukenhle Innocent Mathe

Durban University of Technology

APPENDIX 4:

DRAFT QUESTIONNAIRE

Investigation of the role of Co-operative Education in preparing Durban University of Technology students in professional skills that arise from real life work experiences.

SECTION A PERSONAL DETAILS

Please put a cross (x) in the appropriate box.

1.1	Gender	
	Male	
	Female	
1.2	Age	
	Less than 20 years	
	20 – 22 years	
	22 -25 years	
	25 years or more	
1.3	kindly indicate the faculty you belong to	
	Accounting and Informatics	
	Applied Sciences	
	Arts and Design	
	Built Environment and Engineering	
	Health Sciences	
	Management Sciences	
1.4	Highest educational qualification obtained.	
	Diploma	
	Advanced Diploma	
	Postgraduate Diploma	
	Masters	
	PHD	

SECTION B PROFESTIONAL SKILLS

Likert scale will be measured on 5-point values starting from (1) “strongly disagree” up to (5)“strongly agree” to interpret the ranking levels.

Please put X to indicate your level of agreement in the following statement:

Workplace learning improve the following professional skills:

	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly Disagree 5
2.1 Adaptability. Being flexible, innovative, open, and resilient, particularly when things don't go according to plan.					
2.2 Computer literacy The knowledge and ability to use computers and related technology efficiently.					
2.3 Problem-solving: The ability to learn, to reason, to think creatively, to make decisions, and to solve problems.					
2.4 Team working: The ability of working in groups to pursue common goals.					
2.5 Time management The skill of organizing and aligning your tasks and objectives into schedule.it involves planning you time effectively so that the right time is allocated to the right activity.					
2.6 Critical thinking					
2.7 Any additional comment					

The skill that involves analyzing a problem, generating and implementing a solution, and assessing the success of the plan.					
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SECTION C WIL STAKEHOLDER SUPPORT

Please put X to indicate your level of agreement in the following statement.

WIL students are given adequate support by the following role players.

	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly Disagree 5
3.1 Departmental secretary					
3.2 Co-operative Education placement officers					
3.3 SETAS (STIPENDS)					
3.4 WIL CORDINATERS					
3.5 Academic staff					
3.6 Workplace supervisor					
3.7 Student Representative council					

3.8 Any additional comments

Interview questions

1. What do you think is the role of WIL in preparing DUT student for the real-life work skills?
2. Should Work Integrated Learning be compulsory for all courses offered by DUT?
3. How did you found your Workplace for WIL?
4. Did you have any challenges in find your workplace for WIL?
5. How many months you spend in your workplace.
6. How did your academic department monitor your WIL?
7. You and workplace Supervisor were able to understand the DUT WIL Logbooks.
8. How was your relationship with workplace supervisor and your WIL Coordinator
9. What organizational skills you gain from your workplace.?
10. What technical skills you obtain from your workplace?
11. What professional skills you gain from your workplace?
12. What support you get from workplace supervisor?
13. How your Wil Coordinator supported your WIL?
14. Was WIL beneficial to you?
15. Before you go to workplace you were trained for Professional Conduct and work Ethics?
16. What other experiences of your workplace learning?
17. What advise can you give to Co-op about WIL Practices?
18. you were assisted with Seta funding for your stipends?
- 19 How long it takes to get placement after you were eligible to undertake

Focus groups Questions.

1. What Is the extent of students' exposure to tasks that enable concrete experience during Work Integrated Learning?
2. To what extend do students reflect on their experiences in a way that enables learning?
3. To what extent do students engage in activities that require abstract conceptualization of their knowledge?
4. What are the students' perceptions of active experimentation after completing the WIL programme

APPENDIX 5:

Permission to conduct research letter

PERMISSION TO CONDUCT RESEARCH AT THE DUT



*Directorate for Research and Postgraduate Support
Durban University of Technology
Open House
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732946*

23 October 2023

Mr Ndukuenhle Mathe
c/o Department of Public Management and Economics
Faculty of Management Sciences
Durban University of Technology

Dear Mr Mathe

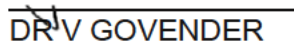
PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted **Gatekeeper Permission** for you to conduct your research "Role of Co-operative Education in preparing students for professional skills at the Durban University of Technology" at the Durban University of Technology. **Kindly note that this letter must be issued to the IREC for approval before you commence data collection.**

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

Upon completion of your research project, you are requested to share the summary of your key research findings.

Kind regards.
Yours sincerely


DR V GOVENDER

ACTING-DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT DIRECTORATE

APPENDIX 6:

Certificate of language editing

CERTIFICATE OF LANGUAGE EDITING

This is to certify that the paper titled:
Role of Co-operative Education in preparing students for professional skills
at the Durban University of Technology

study submitted in complete fulfilment of the requirements of
the Degree: Master of Philosophy Management Sciences,
Specializing in Public Administration

By
NDUKENHLE MATHE
Student number: 21435968

Has been edited for language by PEACE OASIS
INTERNATIONAL, Language Editor. Neither the research
content nor the author's intentions were altered.
The editor guarantees the quality of the English Language in this
paper. The following issues were corrected: grammar, spelling,
punctuation, sentence structure, and phrasing.

Date issued. 06 October 2024

Dr. K. Shonhiwa: Head

POII012
Certificate number



APPENDIX 7:

Turnitin Report.

Dr S.S.PILLAY 29/11/24

nduthesis1

ORIGINALITYREPORT

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STUDENT PAPERS

PRIMARYSOURCES

1	openscholar.dut.ac.za Internet Source	1 %
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4	DongchengLi. "ResearchDesign in Chinese Medicine – Linking Social and Health Sciences", CRC Press, 2025 Publication	1 %
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Biko/City Campus Tel: 031 373 2000 P O Box 1334, Durban, 4000

Pietermaritzburg Campus Tel: 033 342 1088 P O Box 101112, Scottsville, 3209

Post Graduate Checklist

No	Document	Student verification	Faculty Officer Verification
1	Attach Proof of 2024 registration <i>NB: Registration for the current academic year is compulsory</i>	 proof of reg.PDF	
2	Indicate the academic years registered for NB: specify Full-time or Part-time Max Masters: 3 Max PhD: 4 <i>Note: A student cannot submit without meeting the minimum criteria of 1 year for a Masters study and 2 years for a DPhil</i>	Full-time	
3	Date of FRC Proposal Approval	02 October 2023	
4	Did you apply for Interruption/Extension of Studies? If yes, please specify for which years	Yes, 2022	
5	Date of Submission of PG 5 – Please attach the Intention to Submit document		
6	Date of PG 6 FRC approval - Nomination of Examiners (Supervisor to ensure this is complete- student is not privy to this)		
7	Ensure PG 7 – Submission of Dissertation for Examination is attached and duly signed by the student, supervisor and		

	HOD				
8	Ethics Clearance (Include as annexure) i.e. did you receive full approval to conduct your study? If yes please confirm which clearance has been received • Faculty Research Ethics Clearance (Level 1) OR • Institutional Clearance (Level 2, Level 3)	IREC	 N I Mathe FA.doc.pdf	IREC	
		FREC	 N I Mathe PA.docx.pdf	FREC	
9	Gatekeepers' letters (Include as annexure on the dissertation/thesis)	 Permission- N Mathe.pdf			
10	Turn it in summary report – under 20% (Please ensure the summary report is signed off by the supervisor and included as an annexure on the dissertation/ thesis)	Yes  receipt_nduthesis1 (1).pdf			
11	Title – the student is to ensure the title of the dissertation/thesis has not changed from the initial title approved at FRC	Has not change			
12	Please ensure an editor/statistician certificate is included as an annexure on the dissertation/thesis	 Ndukenhle editors certifiucate.pdf			
13	Please ensure the dissertation/thesis is signed off for final approval by the Supervisor/co-supervisor and the declaration page is signed by the student				
14	Letter of Information Letter of Consent Gatekeepers letters Questionnaire	Yes			

	Above to be included as annexures		
14	Please advise if there are any Publications underway (include proof of acceptance/submission if completed at the submission phase)	Not yet	

I, **_Ndukenhle Innocent MATHE_____** (Student Name), **_21435968_____** (Student Number) hereby confirm the above-mentioned documents have been submitted to the Faculty Research Officer accordingly along with the PDF Final signed Bound Thesis/ dissertation for Examination.

I acknowledge that in the event of a Pass, I will **only** be eligible for graduation upon satisfying the Minimum Duration Rule G25 (2)(a) or Rule G24 (2)(a)

Rule G25(2)(a) – Applicable to a Doctoral Study

(2) Minimum and maximum duration

(a) The minimum duration for a Doctoral Degree shall be two consecutive academic years of registered study.

Rule G24(2)(a) – Applicable to a Masters Study

(2) Minimum and maximum duration

(a) The minimum duration for a Master's Degree shall be one academic year of registered study.

Student : _____ Date: **__29 Nov. 24__**

Supervisor : _____ Date: **__29/11__**
FRO : _____

FRO STAMP