Cape Peninsula
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WORK-INTEGRATED LEARNING AND GRADUATE EMPLOYMENT: A CASE STUDY OF A UNIVERSITY OF TECHNOLOGY IN THE WESTERN CAPE

by

BONGIWE MONI

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Supervisor: Prof M Twum-Darko

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DECLARATION

I, Bongiwe Moni, declare that the contents of this dissertation represent my own unaided work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed: **Date:**

ABSTRACT

This dissertation investigated the extent to which the Work-Integrated Learning (WIL) programme, a pre-requisite for students who are in their final year of acquiring a national diploma at universities of technology. The programme is meant to equip students with the requisite skills and competencies to prepare them for the labour market. The study used extant literature on WIL and employment in South Africa to illustrate the practical experiences of students who had undergone the WIL programme in terms of the effectiveness of the programme in equipping them with relevant skills for the labour market.

Both qualitative and quantitative approaches were used in the study, with a questionnaire being distributed to the entire alumni database of a selected University of Technology. In addition, a semi-structured, face-to-face interview was conducted with the Director of the Work Integrated Learning Office at the selected university. The responses received from the distribution of the questionnaire numbered 80, which provided ample insight into the respondents' experiences with the WIL programme, as well as their employment status.

Some of the findings suggest that the WIL programme is achieving its intended purpose of equipping students with the necessary skills to navigate and participate in the labour market. The results provide some of the reasons for both unemployment and employment amongst graduates, as well as the value of WIL. The results also suggest that more collaboration could be established and strengthened between higher education institutions and the corporate sector in order to adequately train graduates so they are ready for employment.

Key words: Work-Integrated Learning, Employability, Employment, Graduate Attributes, Experiential Learning

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In this journey, I have latched onto the scripture in Philippians 4 verse 13 which says, *'I can do ALL things which He has called me to do through Him who strengthens and empowers me to fulfil His purpose'.*

To God Be All the Glory!!

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CHAPTER 1

1.1.   Introduction

In the past decade, South Africa has seen a large increase in the number of unemployed youth, including those who have matriculated and tertiary-level graduates. Young people between the ages 18–24 remain the most susceptible in the South African labour market; the unemployment rate amongst this age group was 55.2% in the first quarter of 2019, (Statistics South Africa, 2019). For graduates in this age group, the unemployment rate was 31% in the exact time compared to 19.5% in the fourth quarter of 2018; an increase of 11.4% quarter-on-quarter. There is evidently a need to make dramatic changes in terms of young people's employability, as well as labour market reforms, if these figures are to improve and the economy is to grow. There is an urgent need, therefore, to address the burgeoning unemployment rate as a first step.

Unemployment in South Africa continues to rise, particularly among the youth cohort, where alarmingly high rates of unemployment persist. The first quarter statistics for 2019 indicated that 55% of the youth aged between 15–24 years were unemployed at that time, and a further 34.2% of youth aged 25–34 were also not employed. Graduate unemployment, although significantly lower, is also considered problematic. It should be noted that these unemployment statistics are coupled with the continued decline of the South African economy, which shrank by 3.2% in the quarter one of 2019 (Statistics South Africa, 2019).

The unemployment figures show South Africa's struggle to escape from the aftershocks of the COVID crisis. With the Quarterly Labour Survey of Q1 2021 showing unemployment reaching a record 32.6% and the expanded unemployment rate, which includes discouraged workers, now standing at 42.3 percent (Statistics South Africa, 2021). However, South African youth (15 -34 years) is bearing the brunt of the problem, with almost one in every second young person unemployed - while the rate of unemployed university graduates was 9.3% in Q1 2021.

Statics SA echoes this, finding 59,5% of youth unemployed (Statistics South Africa, 2021). Irrespective of education level: the graduate unemployment rate was 40,3% for those aged 15–24 and 15,5% among those aged 25–34 years, while the rate among adults (aged 35-64 years) was 5,4 %.

Of the 10,2 million persons aged 15–24 years, 32,4% (approximately 3,3 million) are discouraged to continue searching and are currently not in employment, education or training – implying that close to one in three young South Africans between the ages of 15 and 24 years were disengaged with the labour market in the first quarter of 2021, precluding them from gaining experience or further skills. With unemployment rates of over 60%, suggests that the youth face extreme difficulties engaging with the labour market in South Africa.

By all accounts, youth unemployment is an impediment that the South African government is yet to find tangible solutions for. As unemployment in the country is more likely to affect young people than older people, some believe that the high youth unemployment percentage is like a looming disaster likely to implode at any given time, which could lead to an Arab spring-like rebellion in South Africa (Mago, 2018:2).

Every year, thousands of students graduate from universities and universities of technology in South Africa, but most of them do not find employment, particularly employment related to their particular fields of study. In most universities of technology, it is a requirement for students to undergo in-service training for a particular period according to the prescription of the course. Work Integrated Learning (WIL) is a type of education which rests on partnerships and collaborations amongst tertiary institutions and industry players, with a sole purpose of soliciting a better learning experience in the workplace prior to obtaining a formal qualification (Lyckhage & Pennbrant, 2014).

This study sought to understand the complexities that exist alongside graduate output, labour market needs and the growing amount of unemployed graduates, as well as to interrogate the Work-Integrated Learning (WIL) programme and its ability to sufficiently equip graduates with skills essential for the workplace. The challenge of graduate unemployment is not exclusive to South Africa; it is rising globally. The ability of graduates to access employment opportunities relevant to their qualifications and skills has thus attracted the attention of various key stakeholders in the higher education and training sector, both nationally and internationally.

"The statutory responsibilities of universities are twofold, namely, to prepare and train graduates with entry-level knowledge and skills for the labour market, and to play a leadership role as a custodian of knowledge" (Jarvis, 2000).

Mouton (1996:173) argued that "it is generally accepted that scientific research does not take place in a vacuum". The author further stated that while studies from different disciplines are conducted separately, they are part of a theoretical framework of that particular field and should form part of interdependent preceding studies. The human capital theory was adopted as a theoretical framework for this study, as one of the objectives of the study was to ascertain which skills and attributes are required by employers when recruiting graduates who are entering the workplace, and whether WIL equips graduates with these skills and attributes.

1.2. The role of higher education institutions in skills development

In an attempt to conceptualise the role of tertiary institutions in skills development, Barnett (1994:62) argued that the modern university curriculum can be understood in terms of two issues: by curricula which are characterised by whether they derive from the internal agendas of the academic community, or by those characterised by the external agendas of groupings in the broader society.

Research findings on reactions of graduates to the transition from higher education to employment have been extremely consistent (Graham & McKenzie, 1995:11). These findings show that some type of reaction or overwhelming feeling is common among students who recently completed their studies and are pursuing work, due to the differences between the type of learning they receive, culture at universities and their own expectations of the workplace. Young graduates are often overwhelmed by the drastic transition from working competitively as an individual to working as part of a team that has set objectives and targets.

The Human Resource Development Strategy launched through the Department of Higher Education and Training in 2001 offers a framework for the development of the South African skills base. Its key objectives are "building the foundations for human resource development, improving employer participation in lifelong learning, supporting employment growth through industrial policies and encouraging innovation,

research and development" (McCord, 2003:32). The role of this strategy is to act as an umbrella primarily to interface between education, skills and employment.

1.3. Curriculum development and its role in shaping training outcomes

According to Cook (1997:57), traditional training courses are becoming less relevant in a rapidly changing world in which "knowledge decays" very rapidly. These realities clearly necessitate the continuous regeneration and production of new knowledge and skills to stay abreast of the developments of the human capacity to cope with change. Some critics allege that the problem of unemployment is further compounded by curricula being offered by schools and institutions of higher learning that do not speak to the requirements of the labour market, thereby creating a bottleneck of unemployed, yet skilled, graduates. Van der Linde (2000:701) argued for the necessity of relevant workplace education in South Africa, claiming that the solution is to move education and training from a traditional and formal setting, to a more informal and practical one.

According to Kraak (2006:32), students who are not given sufficient career guidance end up making poor subject choices, which has a negative impact when they transition from school to further education or work. The author further stated that student decisions regarding choosing subjects are influenced by certain societal and cultural pressures, which contain prejudiced views on technical or vocational training. Such decisions are often emotional and leave out an array of opportunities that could have been afforded a student had the right subject choices been made.

Career guidance is part of a wider domain through which learners and students discover and survey multiple possibilities concerning their possible paths through life. For some, the primary role of career guidance has been identified as an instrument through which seamless transitions from education to work are facilitated, thereby enabling the labour market to function efficiently and effectively (Barrie & Malik, 2005:4).

With reference to the South African context, Horn (2006:113) argued that "regardless of the improved Grade 12 final results over the past years, it is estimated that only between 5% and 7% of successful matriculants find employment in the formal sector". Claiming additionally, that students are not adequately prepared for the modern technically advanced world of work, the author faults the education system for not

gearing up students with the necessary attributes over and above the qualifications that are required by the employer.

1.4. Work-Integrated Learning

The literature cites several definitions for WIL, which differ according to institutions and countries. Beard and Wilson (2002:36), Groenewald (2004:74), defined WIL as "student learning for credit designed to occur either in the workplace or within a campus setting that emulates key aspects of the workplace". Katula and Threnhauser (1999:240) defined WIL as "the insight gained through the conscious or unconscious internalisation of our own or observed interactions which build upon our past experiences and knowledge". These definitions have a common trait, that is, WIL is a relationship between the institutional environment and the practical work environment (Beard & Wilson, 2002:55). As noted by Groenewald (2004:17), in 2002, The National Commission for Cooperative Education presented a more comprehensive definition of WIL, describing it as: "A structured strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals." WIL can thus be seen as a bridge between the theory that is provided in institutions of higher learning to a practice where the theory is applied. Groenewald (2004:55) also commented that a "small group of students working together to achieve a common goal does not constitute WIL". It is further argued that if WIL is education through work, analysing the definition of work is essential in the formulation of the curriculum. It is, therefore, important that a curriculum is structured in a method that is reactive to the requirements of the workplace.

Work-integrated learning programmes in universities are not a fresh phenomenon. Conventionally, the application of practical assessments has been an inherent part of the modus operandi of vocational-oriented degrees that has proven to be worthwhile. This is done to ensure that a student is not only equipped with the theoretical aspect of learning, but is able to transfer theory into practical, usable practice. Work placement programmes have grown momentum over time; they are highly encouraged by employers who are aiming to attracting young talent, prized by students who have a desire to gain workplace exposure and experience prior to attaining formal employment, and valued by institutions of higher learning that have a desire to see theory brought into practice. To this end, there are growing attempts of increasing the

prevalence of work placements as either a prerequisite or as electives in more programmes.

It is important to remember, however, that, "effective programmes require access to quality learning environments, preparation and support for supervisory staff and establishment of appropriate risk management and minimisation processes" (Orrell, Cooper & Jones, 1999:80). In addition, according to Britzman, "effective work experience must involve meaningful work as a means to an end, not an end in itself; the experience of work is not enough to produce transformed learning" (Britzman, 2003:65). A unique feature of a successful WIL programme is the involvement of, and partnerships among, various stakeholders, including employers, students, academic teachers or curriculum designers, professional bodies and so on. "If continuing success is to be achieved, there needs to be recognition of all the parties involved, with clear agreements between them. Furthermore, attainment of explicit mutual benefit is essential. If the benefit fails for any party, the partnership ceases to be effective" (Harvey, Moon, Geall & Bower, 1997:51).

The core objective of the WIL programme is to equip students with practical working experience based on the theory that the student has been exposed to and increase their skills, which should enhance employability prospects.

1.5. Graduate attributes

Graduate attributes are generally defined as the "qualities, capabilities and understandings of a graduate which a university community agrees students should develop during their time at the institution, both for their future professions and to make a contribution as ordinary citizens" (Christensen & Kift, 2000:207). Worldwide, increasing value is placed upon the improvement of graduate attributes in higher education (Smith & Bath, 2006:259). In South Africa, there is growing pressure on higher education institutions to produce graduates that possess more than their formal qualifications, attributes and skills that enable them to work efficiently (Griesel & Parker, 2009:1).

Griesel and Parker's study (2009) confirmed that 'knowledge, skills, competencies and values of new graduates are a necessary pre-condition for graduate employability'. Companies constantly "rank communication skills, in particular writing ability, as among the most important skills for graduates to possess" (Bacon & Anderson,

2004:217). However, the task of enhancing writing skills, especially punctuation, grammar, and word choice in higher education, may require considerable effort on the part of the lecturer (Bacon & Anderson, 2004:443).

Chapman (2004:215) advanced four arguments supporting the adoption of graduate attributes. Firstly, any authentic university's strategic plan should emphasise the importance of graduate success after completing their studies when engaging in the world of work. "Employability of a graduate is the inclination of the graduate to exhibit attributes that employers anticipate will be necessary for the future effective functioning of their organisation" (Harvey, 1999:53). The second argument originates from the view that a university has the responsibility to provide graduates with an ability to operate in the community. Thirdly, students should be prepared for the world of work during their undergraduate studies. As knowledge is constantly changing, students need to have skills to adapt to such changes, thus developing the skills of lifelong learning. The fourth argument relates to the expectation of employers that graduate attributes are a pre-condition for a graduate's employability.

WIL benefits for students abound, for example, development in these skills: communication, interpersonal relations, technology, writing, punctuality, attendance, team work, leadership, career development, observing theory in practice, putting theory into practice, awareness of workplace culture, meeting workplace expectations; opportunity to develop a range of personal attributes, coping in a rapidly changing world of work, enhanced employment prospects, developing career strategies, developing interactive attributes, and building a network of contacts (McLennan and Keating 2008; Orrell 2004; Cooper, Orrell and Bowden 2010).

1.6. Employability in the context of the study

The term 'employability' refers to the chance that an individual will search for employment and remain employed for a particular timeframe in spite of fluctuating economic climates. Brown, Hesketh and Williams (2003:111) defined employability as "the relative chance of acquiring and maintaining different kinds of employment". Simply put, employability is about being able to acquire, maintain and remain in a fulfilling job. Employability is "the capability to move self-sufficiently within the labour market to realise potential through sustainable employment. For individuals,

employability depends on the knowledge, skills and abilities (KSAs) they possess, the way they use these assets and present them to employers and the context (for example, personal circumstances and labour market environment) within which they seek work" (Hillage & Pollard, 1998:157).

There is no universal description of employability, however the literature submits that employability is about work and the capability of an individual to be employed.

Such definitions include:

- "the ability to gain initial employment; hence the interest in ensuring that 'key skills', careers advice and an understanding about the world of work are embedded in the education system,

- the ability to maintain employment and make 'transitions' between jobs and roles within the same organisation to meet new job requirements, and

- the ability to obtain new employment if required, in other words to be independent in the labour market by being willing and able to manage their own employment transitions between and within organisations" (Hillage & Pollard, 1998:159).

Employability is also about the quality of the work, as well as the sustainability thereof. Even if people are able to find employment, if that employment is not at their skills level, does not pay well or is not stable, they are regarded as employable (Hillage & Pollard, 1998:159).

From these definitions, it may be concluded that employability is not only focused on vocational and academic skills – there is far more to it. People require appropriate mentoring and information to help them make knowledgeable choices about the employment opportunities at their disposal. They may further require support in interpreting information that would be useful to them and contribute towards their development.

The global financial crisis was a burden on all regions in the world, but especially developing countries like South Africa. The unemployment rate and poverty levels in South Africa remain very high, even though the country is rated as a middle-income country. The classification of South Africa as a developing country, the challenge of unemployment brings additional socio-economic problems, such as poverty, inequality, and obstacles such as political and social instability. Two distinct definitions for unemployment are used in South Africa. The first is the authorised definition of

unemployment, which is based on the international standard developed by the International Labour Organisation (ILO). This refers to "people within an economically active population who did not work during the prior seven days and a week; who want to work and are available to start work". The second is the "expanded definition, which includes people who are not searching for work and have not searched for work in the past month" (Pollin, 2006). Students mainly undertake tertiary education to improve and increase their probability of success when seeking employment (McCune, Hounsell, Christie, Cree & Tett, 2010).

The growing economy of South Africa is confronted with increasing challenges of graduate unemployment, and in particular, youth unemployment. There are various reasons for this growing phenomenon of unemployment; it can be argued that there could be a misalignment in the training provided by institutions and the skills required by employers. The country is facing increasing numbers of unemployed graduates, yet in recent years many youth have been flocking to tertiary institutions as a way of creating better chances for employment in South Africa's competitive economy. Universities, therefore, should be mandated to strike a balance between theory and practice by broadening the purpose of producing well-rounded people who will meet the demands of the labour market.

1.7. Graduate employment challenges and labour market disconnect

The South African youth labour market is rife with challenges, which include its "inability to facilitate the transition of youth from school to employment activities" (Kraak, 2003:13). The magnitude of research on graduate employment in South Africa is not clear. For instance, Jarvis (2000:35), in a substantial paper on the scope of quantitative social science research and the use of sample surveys regarding graduate employment, does not once mention tertiary studies. This is despite the fact that investigations have, since at least the 1950s, provided information on the magnitude of graduate employment, unemployment, skills and competencies, and offered in-depth information on the distinct role of graduates in the development of the nation as well as the economy. Although tremendous social and political changes have occurred over the years, evidence indicates that graduate employment challenges are multi-faceted. According to Mago (2018), these challenges include the demographics of

graduates, the disparities in skills and labour market requirements as well as the shortage of skilled graduates in certain priority fields amongst others.

The inability of graduates to find jobs that are relevant to their qualifications is a growing problem that has enticed the attention of several stakeholders in the higher education sector, both nationally and internationally. The problem that served as motivation for this study is the increasing number of young graduates who are unemployed, despite having spent several years studying for, and obtaining, qualifications. In universities of technology, as part of the national diploma qualification, students are required to undergo a six to twelve month in-service training (WIL), which is meant to equip them with skills that will increase their prospects of acquiring employment upon completion of their studies. This programme is a compulsory component of the national diploma qualification at universities of technology. If WIL is succeeding, why is graduate unemployment increasing? If it is not, it is important to establish what factors are contributing to its failure and how they can be addressed.

According to Jarvis (2000:43), tertiary institutions have two statutory responsibilities: preparing and equipping graduates with the requisite skills and competencies for the labour market, and playing a leadership role as custodians of knowledge. It is important to determine the extent to which tertiary institutions are meeting these responsibilities and, if they are meeting them, to ascertain what factors are catalysts to the increasing rate of graduate unemployment.

1.8. Problem statement

According to Welman, Kruger and Mitchell (2005:14), "a research problem refers to some difficulty that the researcher experiences in the context of either a theoretical or practical situation and to which a solution is sought". The disparities that exist in tertiary education readiness of graduates for the workplace is a global discussion. In 2009, Higher Education South Africa (HESA) published a study entitled "Graduate Attributes", which focused on the perception of employers regarding graduates. The report highlighted the differences in the perceptions of employers regarding the work preparedness of new graduates and the expectations of graduates of the work environment.

The South African Graduate Recruitment Agency (SAGRA) conducted surveys in 2009 and 2010, which indicated that most of their partners who employ graduates had experienced shortfalls in their quest to recruit graduates to fill vacancies. Some 41% of the organisations surveyed confirmed that they had not filled all their vacancies for 2009 and 2010. The largest shortfalls were experienced in the fields of auditing and electrical and mechanical engineering.

The primary reasons given were a lack of students attaining the correct degree, and industry competition for the few with correct qualifications. With many students entering universities and other formal tertiary institutions each year, the question of concern is: are students being trained for qualifications that are aligned with the requirements of the labour market, or are universities producing students with qualifications that will be of no value to the economy?

The current job climate demands that students have a holistic set of skills - both in terms of their field of expertise, technical know-how to participate in an increasingly digitised work environment and also so called soft skills such as communication, critical thinking, problem solving, self-discipline and time management (especially in the current work from home economy). Skills mismatch occurs when a graduate does not have the skills required by the employer or a graduate's career choice does not coincide with the jobs that are in demand.

It is essential for tertiary institutions to have direct communication and interaction with the workplace, to keep their finger on the pulse of the current needs in the working environment, so as to create an efficient ecosystem that supplies matching skills to quality jobs in order to build our economy and stimulate graduate entry into the workplace.

The National Skills Development Strategy III (NSDS-III) [2011 – 2016], which was introduced by the Department of Higher Education and Training, advocated for a skills development system that is practically responsive to the labour market and ensures social equity (NSDS, 2011:33). The NSDS was meant to respond to the following persistent impediments affecting the ability of the South African economy to expand and provide increased employment opportunities:

- Insufficient levels of skills and a lack of readiness of students from secondary schools as well as graduates for the world of work. The problem is further compounded by poor connections and communication between institutions and the workplace.

- Systemic blockages, which include a disconnection and incoherence in the post school systems (for example universities, FET colleges and Sector Education Training Authorities (SETAs).

To acquire a national diploma at a University of Technology, students are required to undergo 6 - 12 months of relevant experiential learning in industry after completing the academic learning component. As a programme, WIL is meant to afford prospective graduates the opportunity to acquire skills and work exposure that will assist in adequately preparing them for the world of work. With a programme such as this, one could argue that all graduates should be employed, however this is not the case; a significant number of students who have undergone the programme cannot find employment.

The Statistics South Africa (Stats SA) Quarterly Labour Force Survey (QLFS) — Quarter 1 of 2021 puts the aggregate rate of unemployed graduates at 9.3%: 40.3% of which represents graduates aged up to 24, 15.5% for those aged between 25 and 34, and 5.4% for those aged between 35 and 64.

More and more graduates are sitting at home, evidenced by the QLFS-Q2 which puts graduate unemployment at 11%, 23.4 percentage points lower than the national official unemployment rate.

Could it be that the skills acquired through WIL are not sufficient? Alternatively, are students applying for non-labour demand related courses?

1.9. Research objectives

The objectives of this study were to:

- assess the effectiveness of the WIL programme in a selected University of Technology in preparing students for the world of work;

- examine graduates' perceptions, expectations and requirements concerning employment after graduating; and

- ascertain how the WIL programme and curriculum in the selected University of Technology responds to the graduate attributes that are required by the labour market.

1.10. Research questions

A research question is meant to narrow down a research study to a particular focus. This study sought to establish the efficiency of the WIL programme in the selected University of Technology against the backdrop of increasing graduate unemployment. In line with the research objectives, the questions this research sought to address are as follows:

- To what extent does the WIL programme meets its objectives and prepare students with the practical skills that are required by employers when recruiting new graduates?

- What additional competencies and skills, over and above a formal qualification, are required by the labour market when employing graduates?

- What programmes or initiatives could the selected University of Technology introduce to address graduate attributes required by the labour market, which are not contained in the curriculum as it is currently structured?

1.11.   Research design and methodology

Welman et al. (2005:2) described research as the "process that involves obtaining scientific knowledge by means of various objective methods and procedures". The authors indicated that a research methodology is used to explain the thinking behind research methods and techniques chosen. This study is positioned within the interpretive paradigm. According to Cohen and Manion (1994:36), the interpretive paradigm seeks to understand human experiences, and further suggests that "reality is socially constructed".

The interpretivist researcher tends to rely upon the "participants' views of the situation being studied" (Creswell, 2003:8). An interpretivist researcher relies mostly on qualitative data collection methods and analysis, or a combination of both qualitative and quantitative methods. The approach to this study was a mixed approach, i.e. it is comprised of both quantitative and qualitative elements. In motivating for this

approach, Mouton (2001:198) indicated that a qualitative approach studies people in relation to their own explanations and emphasises participants' subjective experiences. This study also collected quantitative data from questionnaires, but the data led to subjective conclusions.

"Qualitative research is concerned with qualitative phenomenon, in other words phenomena relating to or involving quality or kind" (Mouton, 2001:1980). Qualitative research is essential in studying human behaviour because it helps explain the underlying motives behind behaviours. In dealing with human behaviour, it is essential to investigate reasons that inform certain behaviours through in-depth questions. This method was applied because the researcher sought to understand from both employed and unemployed graduates how the WIL programme assisted in their job search, if at all.

Welman et al. (2005:60) asserts that, "the word 'qualitative' implies an emphasis on processes and meanings that are rigorously examined, or measured in terms of quantity, amount or frequency. The aims of qualitative research methods are to establish the socially constructed nature of reality, to stress the relationship between the researcher and the object (what) of study, as well as to emphasise the value-laden nature of the enquiry".

1.12. Type of sampling

According to Kothari (2004:20), "all the items under consideration in any field of inquiry constitute a universe or population. A complete enumeration of all the items in the population is known as a census inquiry. Samples can either be probability samples or non-probability samples. With probability sampling, each component has a known chance of being selected and included in the sample; non-probability sampling does not allow the researcher such flexibility". Probability sampling was used in the study, which sought to investigate the effectiveness of WIL. Kothari (2004:36) indicated that according to this technique, "the population is stratified into a number of non-overlapping subpopulations and sample items are selected from each stratum".

Data were collected from the WIL office at the selected University of Technology, as well as the alumni database of the selected University of Technology. Data collection methods

Structured in-depth interviews were conducted with the Graduate Placement Office of the selected University of Technology to assess the WIL programme, as well as to establish the WIL office's relationship with potential recruiters.

As indicated earlier, a questionnaire was sent electronically to alumni who graduated between 2008 and 2014 from the Engineering and Education faculties of the selected University of Technology, in order to determine their employment status, competencies and job satisfaction.

1.13. Ethical considerations

The following ethical considerations were applied:

- Gatekeeper letters were obtained from the selected University of Technology.

- Anonymity: participants' names are not disclosed in the study.

- Confidentiality: all information shared has been treated as confidential.

- Informed consent: there was no deception, bribery or the creation of false expectations.

- Harm: No physical or emotional harm came to any participants.

- Consent forms were sent to participants requesting their consent to participate.

- Ethical clearance was acquired through the Ethics Committee of the Faculty of Business and Management Sciences.

1.14.   Data Analysis

Mouton (2001:109) stated that "the aim of analysis is to understand the various constitutive elements of one's data through an inspection of the relationship between concepts, constructs or variables and to see whether there are any patterns or trends that can be identified or isolated or to establish themes in the data". The data collected were analysed using the approach of Rubin and Rubin (1995:226), i.e. "data analysis begins while the interviews are still underway". All the web-based questionnaire responses were automatically captured in a database, and once all the data were

collected, they were collated into an Excel spreadsheet and exported into a statistical tool for analysis.

The qualitative and quantitative data were compared and differences between employer and alumni perceptions of graduate attributes were highlighted. The quantitative findings were presented graphically in tables and pie-charts, which are explained in the narrative.

1.15. Conclusion

Preliminary indications show that a well-planned WIL programme is able assist students to inter-change continuously between theoretical knowledge and the application of skills and competencies. In its intended format, WIL provides various opportunities to develop skills and integrate theory and practice. Since WIL is an ideal pedagogy to stimulate self-directed learning and develop critical thinking skills, the sound implementation of WIL should be approached from an evidence-based educational viewpoint.

This dissertation contains five chapters, with the first chapter introducing the study, and providing the background and the rationale for the study. The second chapter presents a review of the literature on the concept of WIL, a brief history of employment, and the emergence of graduate employment challenges. It also highlights key priorities and attributes that companies seek when recruiting new graduates in South Africa.

The third chapter presents the methodology, and seeks to provide a theoretical underpinning that justifies the methods selected in this research and why they were considered.

Chapter four presents and analyses the findings, and includes all the relevant insights that were obtained and systematised during data collection. Moreover, the chapter answers the key research questions and objectives. Chapter five concludes the study by presenting recommendations and the final conclusion of the study.

CHAPTER 2
LITERATURE REVIEW

2.1. Introduction

This study sought to understand the complexities that exist regarding South Africa's graduate output, labour market needs and the increasing number of unemployed graduates, as well as to thoroughly interrogate the WIL programme and its ability to sufficiently equip graduates with appropriate skills for the world of work. The challenge of graduate unemployment is not exclusive to South Africa; the ability of graduates to access employment opportunities consummate to their qualifications and skills has attracted the attention of various role players within the higher education sector both nationally and internationally. The statutory responsibilities of universities are twofold, i.e. "to prepare and equip graduates with entry-level knowledge and skills for the labour market, and to play a leadership role as a custodian of knowledge" (Jarvis, 2000).

Unemployment overall also affects graduates, although those dropping out of school early are even more adversely affected. A large number of youth are faced with multiple difficulties on their pathway from formal education to the labour market, which is why there is a strong need for interventions aimed at unemployed youth. The state should put more effort into creating strategies and interventions that will strengthen the demand side of the labour market and increase youth employability. The South African government and non-governmental organisations (NGOs) should also work together and invest in policies that target unemployment, which affects a large percentage of South Africans.

The literature reviewed was underpinned by the Human Capital Theory and the Human Resource Development Strategy of South Africa, a policy developed by the Department of Higher Education and Training which aim to interface between schooling, skills and the requirements of the labour market.

2.2. Human Capital Theory and the Human Resource Development Strategy of South Africa

The Human Capital Theory was founded by University of Chicago economists, including Gary Becker and Theodore Schultz, in the 1960s (Becker, 1963; Schultz, 1963). Today, it is a deep-rooted element of Standard Economic Theory.

This theory regard education significant insofar as it creates skills and enables people attain knowledge, which aids as an investment into the productivity of human beings as an economic production factor, that is, as a worker (Robeyns, 2006). Therefore, "education is important because it enables employees to be more productive, enabling them to earn higher wages. By regarding skills and knowledge as an investment in one's labour productivity, economists can estimate the economic returns on education for different educational levels and types of education" (Robeyns, 2006).

Human Capital Theory asserts that formal education is vital for the enhancement of the productive capability of a population. It emphasises how education grows the output and effectiveness of employees by increasing their intellectual capabilities economically productive human capacity, which is a product of innate abilities and investment in human beings. "The provision of formal education is seen as an investment in human capital, which proponents of the theory have considered as equal as or more worthwhile than physical capital" (Almendarez, 2013).

This model of education certainly makes a significant argument, which is skills and knowledge, attained through education, remain an essential aspect of a person's income-generating capabilities. This is mainly significant in the context of people living in dire poverty, because acquiring basic skills or a decent education can make all the difference between starving and surviving, and between merely surviving and having a decent life. Thus, "the attention paid to education as human capital should be applauded, as it has broadened development discourses that previously only focused on technical progress and macro-economic development, to include people as central to economic development efforts" (Almendarez, 2013).

It is for the reasons underpinned in this theory that most students undertake post-graduate studies. Students realise that in changing economies and times, the need for formal qualifications can never be understated. The despondency amongst many unemployed graduates is based on their mistaken belief that their studies will yield immediate employment and better opportunities.

2.3. Human Resource Development Strategy of South Africa

The past few years have been characterised by low economic growth in South Africa, especially when compared with the rapid growth experienced by many African countries. South Africa's economic growth, which is amongst the slowest on the continent, is hampering redistribution of wealth and the restructuring of the economy, as well as access to economic opportunities. It has long been acknowledged that a critical challenge in achieving inclusive growth is the low skills base of the country's workforce.

This challenge has its origins in the history of the country, and the structured inequality that was built into the education and training system under Apartheid. The inherited challenges have been difficult to address and deeply embedded systemic problems remain. Some of these challenges relate to weaknesses in certain portions of the education and training system, while others relate to the absence of coordination in different parts of the value chain and system. Certain problems can be addressed by one department of government, whilst others require a level of collaboration between different stakeholders. To address these challenges and ensure a focus on this key enabler of development, it was agreed in Cabinet that a powerful, high-level structure should be established in the form of the Human Resource Development Council of South Africa (HRDC) and that there should be an overarching strategy within which all HRD stakeholders can work together to accomplish a common set of agreed goals.

There is extensive agreement that the economy of South Africa has weakened over time, nor is it growing and diversifying in the manner essential to replace and replenish the jobs being lost in traditional industries such as mining and agriculture. It is essential to achieve continued comprehensive growth that will enable continuous and substantial reductions in unemployment and poverty. Quality education and increasing skills levels is a crucial catalyst for growing the economy, as highly skilled individuals produce jobs and appropriately capable people can be absorbed into employment when jobs are created.

2.4. Employment

Those South Africans who are willing and capable to work but are unable to get a job are considered unemployed (Barker, 2005). Unemployment not only negatively affects the economic indicators of a country, but also its social norms.

Unemployment is undoubtedly the most serious problem the South African economy is experiencing currently, and it is possibly the root cause of many of other problems, such as the high rates of crime, violence, poverty and inequality. Unemployment in South Africa can be described in two key ways.

The endorsed description of unemployment, grounded on the international standard developed by the International Labour Organisation (ILO), refers to people within the economically active population who did not work during prior seven days and a week, but who want to work and are available to start work. The expanded definition of unemployment "includes those people who have not searched for work during the past four weeks" (Pollin et al., 2006). Unemployment is a socio-economic challenge that reduces economic welfare and output of any country.

2.4.1. Unemployment

The South African economy been experienced climbing unemployment for several years. According to Statistics South Africa (2014), in 2011 the unemployment rate was 24.2%, which had increased to 25.2% by 2013. Bhorat and Jacobs (2010) argued that a fundamental transformation has been observed in labour demand trends in terms of a shift towards high-skilled workers, which made researchers conclude that "the unemployment problem in South Africa is structural, that is, poorly educated workers, who constitute the majority of the labour supply, cannot find employment due to stunted demand for low-skilled resources" (Pauw, Bhorat & Goga, 2006).

High unemployment rates create instability in a country, as unemployment increases risky behaviours. People's negative labour market experiences and long-term unemployment also lead to low self-esteem, depression and discouragement. These experiences result to adverse impact on the probability of an employer hiring South African citizens. According to Oluwajodu et al. (2015), "in Australia, unemployment was found to be strongly associated with depression, suicide and loss of confidence, while in Sweden, it was associated with nervous complaints and depressive symptoms".

According to the New Growth Path (NGP) 2010, the main challenges hindering the youth from partaking meaningfully in the conventional economy are joblessness, poverty, and inequalities. The Labour Force Survey (LFS) conducted by Statistics South Africa (StatsSA) in 2014 reflected the youth unemployment rate in South Africa as being above 60%, with young women more severely affected than their counterparts

of the opposite gender. While numerous employment opportunities were created, they have not been sufficient to accommodate the number of young people in search of work. Among the employed, the percentage of young people who work in the informal sector is significantly higher than adults.

Banerjee et al. (2006) examined the labour force broad participation, employment and broad unemployment by comparing the October Household Survey (OHS) 1995 and Labour Force Survey (LFS) 2005. Their study found that the comprehensive unemployment rate and the extent of the rise in unemployment was higher in the youth category. The unemployment rate increased from 31.3% to 52.3% in those aged 22 to 24, and from 21.3% to 36% for those aged 25 to 29.

The Development Policy Research Unit (DPRU) conducted three studies in which the characteristics of the labour force, employment and unemployment were analysed. The population was divided into five age groups (15 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 65 years). First, Bhorat and Oosthuizen (2005) compared OHS 1995 with LFS 2002 and found that "the increase in the labour force was the greatest in the 25 to 34 year old cohort (30%), followed by the 15 to 24 year old cohort (25.2%). These two cohorts accounted for 53% of the labour force in 1995, but this increased to 60.4% in 2002. Although employment increased in all cohorts between the two surveys, the increase was lowest in the two youngest cohorts, as their share of employment decreased from 45.3% to 42.5% between the two surveys. The unemployment rate increased in all age cohorts, but the increase was greatest in the two young cohorts". Discouraged work seekers were also briefly examined, with the 15 to 24 year old cohort comprising 28.6% of discouraged work seekers in 1995, increasing to 33.8% in 2002 (Yu, 2013).

According to Maswanganyi (2015), the mining industry did not record massive job losses in the third quarter of 2015, despite some mining companies reporting job cuts over that period. The agricultural sector also added a significant number of jobs even after a severe drought in 2005, which sharply curbed output. Despite all these positive indicators, unemployment increased to 25.5% in the third quarter of 2015. According to a 2015 report by Statistics South Africa (StatsSA), 5.4 million people looking for work were unable to find jobs in 2014 and 2015. Even though jobs were created by some

sectors, others shed jobs, which led to an overall rise in unemployment (Maswanganyi, 2015).

Flanagan and Mbangeni (2015) noted that while university students won their battle against university fee increases, once they graduate, many will struggle to find jobs. South Africa's employment rates are still far lower than the National Development Plan's target, which seeks for 24 million people to be employed by 2030 and unemployment to drop to 6%.

Table 2.1: Unemployment rates in South Africa 2018

Official unemployment		Expanded unemployment	
Gender	Percentage	Gender	Percentage
Women	27.9%	Women	38.5%
Men	23.5%	Men	30.9%

(Author's own computation data used from StatsSA, 2018)

Table 2.1 shows the official and expanded unemployment rates in 2015, when women had higher unemployment rates than men in both official and expanded unemployment. The South African economy is not growing fast enough; in 2014, Gross Domestic Growth (GDP) was just 1.5%, and labour unrest and electricity shortages continued the reduction in economic activity that had been evident since 2011. A greater focus on manufacturing exports can create indirect employment opportunities (jobs in industries providing inputs into manufacturing exports). These jobs are likely to be more capital- and skill-intensive, (Masiteng, 2015). In the first quarter of 2016, a large number of jobs were shed across the formal and informal sectors of the economy. According to a StatsSA report (2016), these job losses were observed in trade, manufacturing and construction. In the last quarter of 2015, unemployment reached 24.5%, and in the first quarter of 2016 it measured 26.7%.

One of the reasons for the increased level of unemployment in South Africa is that the economy is not growing fast enough, and labour legislation makes it difficult to release people who do not perform their duties efficiently, resulting in some private companies preferring to use contractors.

South Africa also suffers from a low skills base, thus an investment in practical skill building may improve the economic outlook. People from other countries (outsourcing) build most of the structures in South Africa because there is a shortage of skills in the country, for example, the 2010 FIFA World Cup soccer stadiums. The education system also needs to be strengthened; citizens need to stop thinking that universities automatically result in good qualifications.

Unemployment is a serious problem in South Africa, especially in rural areas, therefore it is crucial to advance policies that can create jobs in rural areas, and investing in infrastructure can be a primary tool for addressing this problem. According to Bhorat, (2012), "an estimated 816,000 green jobs could be created in the country by 2025 across the areas of natural resource management (biodiversity, water and land), energy generation, and energy efficiency and pollution management. South Africa has one of the highest official unemployment rates (25%) and is one of the most unequal countries in the world, with a Gini coefficient of 0.69". The wealthiest 4% of households in South Africa receive 32% of the country's total income, while 66% of households receive only 21% (Bhorat, 2012). The author argued that "over half of South Africans live below the national poverty line, and more than 10% live in extreme poverty, i.e. on less than $1.25 (R15.85) per day. The social foundation developed for South Africa consists of energy, water, sanitation, housing, education, health care, jobs, income, household goods, food security and safety. According to Bhorat (2012), a substantial percentage of people are living below the poverty line".

The South African government has an aspiring goal of 5.4% growth in GDP and 11 million new jobs by 2030 (Bhorat, 2012) , yet this will be impossible if substantial numbers of people are left below the social foundation. Bhorat (2012) noted that growth alone is insufficient, however; any growth must be good quality and work for the poorest people first as well as radically reduce inequalities.

2.4.2. Youth unemployment

Youth face higher rates of unemployment than older people around the world, which has become even more noticeable since the global financial crisis of 2007/8 (Levinsohn, Rankin, Roberts & Schöer, 2014).

While young South Africans, classified as those within the age group of 15–34 years (Department of Basic Education, 2011) have developed themselves and acquired improved education over the last decade, unemployment amongst them remains high and increases every year.

According to Oluwajodu et al. (2015), youth unemployment is affected by employability, the nature of qualification acquired, and the quality of secondary school and tertiary education. Griesel and Parker (2009) emphasised five key sets of skills and attributes employers seek when recruiting graduates; "basic skills, intellectual ability, workplace skills, applied knowledge and interactive skills are regarded as the most important. South African graduates are often unsuccessful in the recruitment phase because they lack some of these required skills".

Pauw et al. (2006) argued that "many students who lack the required skills come from historically black institutions, where they did not develop these skills or acquire work experience. As a result, graduates become disadvantaged because the skills they learned are not required in the working environment".

Lie (2007) claimed that "graduates should not be entirely blamed for the unemployment condition, as graduates, employers, government and universities are all involved". Graduates are more intellectually inclined and do not possess attentiveness of the newest developments and applicable skills. Lie (2007) stated, and generally believes that their education is sufficient, however, their skills are not adequate, while universities themselves consider their graduates to be sufficiently prepared and ready for the workplace. Subsequently, employers perceive graduates to lack vital core skills for employment. Such perspectives must be addressed to enhance the employability of graduates.

The standard and quality of secondary education is another indirect contributor to graduate unemployment. According to Mlatsheni (2005), "fewer students who complete high school are passing with exemption, and many students are regarded as functionally uneducated. This means that an average Grade 12 student who has just matriculated does not possess adequate writing, mathematical and communication skills to perform at the university level (especially those from a rural area/disadvantaged school background) because the quality of secondary school education is low". These learners are not resourced and adequately equipped to enter

and thrive in further education, which ultimately leads to high failure and dropout rates (Pauw et al., 2006).

Variations in the excellence and quality of higher education institutions have also contributed to graduate unemployment. Graduates from disadvantaged universities suffer the most because some employers have preferences towards employing students who have graduated from certain institutions perceived to be of a superior quality.

Additionally, some graduates remain unemployed because after graduating they expect potential employers to pay them higher salaries even though they have not acquired work experience. This leads to them declining positions which they deem are low paying jobs.   Thus, with such expectation few graduates want to start at a low level.

Since 1994, the South African government has implemented numerous policies to reduce unemployment, but have not succeeded in creating enough jobs for young people and reducing youth unemployment. In quarter four of 2015 and quarter one of 2016, youth unemployment increased from 3,412,000 to 3,744,000 (StatsSA report, 2015). In quarter one of 2015, "the official unemployment rate was 37% for youth between the ages of 15 and 34 years" (StatsSA report, 2015).

According to Graham and Mlatsheni (2015), the official unemployment rate has increased from 33% since 2008. Regardless of policy implementation and interventions, youth unemployment has worsened and many young people have given up seeking jobs. Young people without matriculation certificates battle the most to find jobs and are the most severely marginalised (Masiteng, 2015). According to a StatsSA report (2016), the expanded unemployment rate, which includes those who were available to work but did not look for a job in the reference period, increased by 2.5% between quarter four of 2015 and quarter one of 2016 to 36.3%. According to Edward (2014), in most countries in the world, young people suffer from lower access to the labour market than the adult population. Edward (2014) argued that "global unemployment is expected to continue to increase, and by 2018, the global youth unemployment rate was expected to have risen by 12.8%".

Another account for the increase in unemployment in South Africa is that the economy is not growing fast enough. Investment must be encouraged, which will create employment not just for youth, but for all citizens. According to Fares and Tiongson (2007), prolonged unemployment may lead to negative effects on a persons' working life in terms of lower wages. South Africa needs to put more effort on programmes that will create jobs, for example expanded public works programmes (EPWP) for the youth.

The increased level of graduate unemployment is not only a South African issue. A number of authors (Kim & Lee, 2006; Plümper & Schneider, 2007; Salas-Velasco, 2007) have noted that university graduates from both developed and developing countries experience difficulty finding jobs, and university graduates have accepted jobs that do not correspond with the training that they received meaning that they accept any job as a means of survival.

One way in which South Africa is trying to curb unemployment is through agencies that support the youth to find jobs, such as Harambee. This agency screens youth for numerical and literacy proficiency, and assesses them to ascertain which sector they are best suitable for. Once the youth are screened, they are either directed into various bridging programmes dependent on their compatibility to industry requirements, or redirected to other programmes should they not meet the recruitment criteria.

In 2014, this initiative met its target of successfully facilitating the placement of 10,000 young people into jobs. Graham and Mlatsheni (2015) noted that Harambee tracks participants and solicits feedback from employers, and has found that 75% of placements stay in their job for at least 12 months. Harambee is thus addressing both the supply and demand sides of the labour market, that is, employers and youth.

LinkedIn is another agency that helps youth to find jobs, as does the National Youth Development Agency (NYDA), which assists young people with education and skills development, health and well-being. The South African government should consider implementing additional policy interventions for unemployment, because its Accelerated and Shared Growth Initiative of South Africa (ASGISA) programme did not reach its employment target in 2014. South Africa needs skills in agriculture and service delivery that will ensure investor confidence in the country (Munns, 2015).

The South African government has created programmes aimed at enhancing demand for job seekers such as the Expanded Public Works Programme (EPWP) and Community Based Public Works Programmes (CBPWP). Even though these programmes only provide short-term work, they aim to prepare people for permanent or longer-term employment. Hemson (2008) showed that in both programmes, 40% of participants were young people. Learnerships and internships also assist the youth, even though for a short period of time (1 year), to enter the labour market. Upon completion of the learnership or internship, some are placed permanently in the organisations and government departments which provided them with learnership opportunities.

The National Youth Service (NYS) programme, a programme administered by the National Youth Development Agency (NYDA), is a "one year programme founded on the international Youth Build model, which places applicants in a structured programme that is concentrated on practical, life and work-readiness skills" (NYDA, 2015). This methodology was piloted in 2011 in South Africa, and has been upgraded through collaborations with national and provincial government departments such as the Department of Human Settlements and local municipalities.

2.5. Work-integrated learning

Work-integrated learning (WIL) is defined as a learning path that integrates theoretical learning acquired at institutions of higher learning with practical workplace exposure that is mandatory within a designed curriculum (Patrick, 2008). The South African Board for People Practices (SABPP) (2014) described work-integrated learning as a comprehensive term that covers the combination of theoretical and practical knowledge in the workplace. The consensus on the intention of work integrated learning is that it seeks to equip students with relevant exposure and skills (Patrick et al., 2008; SABPP, 2014). The SABPP (2014) highlighted that work integrated learning provides space for graduates and students to put theory into practice and improve their skills through practical experience, rather than their knowledge being purely theoretical. This is important because theoretical experience is not commensurate with practical skills. It is thus critical to find a means of merging academic theory and practical experience in order to fully equip students.

There are measurable benefits to students, the employer, the community, and to the educator (McLennan and Keating 2008).WIL projects have demonstrated increases in job knowledge and skills, and lead to an improvement of attitudes and behaviours towards work readiness. WIL projects have several positive effects on student learning, such as the identification of theoretical concepts taught in class, putting theory into practice, appreciating that academic success is not the only attribute for career success, and development of communicative abilities (Freudenberg, Brimble and Vyvyan 2010, 44).

The world has been experiencing a drastic shift from theoretical-centered education to one that includes both theory and practice. This shift is a result of learners requiring exposure/experience to do their new jobs in order to effectively maximise their potential. Many studies suggest that work integrated learning plays an important part in preparing graduates to make significant contributions to their workplaces (Sewell, Venter & Mason, 2016; Coll & Chapman, 2000). Work-integrated learning depends on three players to yield the required results; the students are the primary party, followed by institutions of higher learning and then the host workplace. These parties also represent the institutional setting, as they start with students, before moving on to university and subsequently the workplace.

Work-integrated learning can also be argued to consist of the various combinations of functions that must exist to enable the process to be as effective as possible. This is because students require universities to gain a theoretical background, as well as workplaces to put their theoretical background into practice and gain necessary exposure. This process is dependent on all three parties; without all of the parties concerned taking part, it is impossible to have a functioning work integrated learning system. Work-integrated learning can therefore be summarised as theory and practice, Patrick (2008).

The shift to work-integrated learning comes at a time where there are high rates of unemployment worldwide and growing inequalities. The World Bank (2014) identified the unavailability of jobs and skills mismatches as the foremost drivers of unemployment among youth. In this regard, there is a need to appreciate the distinction between young people being unemployed and being unemployable.

On the one hand, someone may be unemployed because there are no jobs, while on the other, they may be unemployed because they are unemployable, i.e. they do not having the kinds of skills that the market is looking for (labour market requirements) (Lin, 2012). Ryan (2000) stated that the demand for labour is driven by the need for highly-skilled labour, not those with intermediate skills. The importance of work-integrated learning is therefore important as it can generate the required skills, rather than intermediary skills.

One way of going about ensuring that labour demands are met is through the coordination of labour demands with what institutions of higher learning are offering. Coordination between institutions of higher learning and host workplaces (labour institutions) is the first prerequisite if a tailored response to the skills mismatch is to be achieved. Coordination requires that universities offer academic training on skills that are in demand in the workplace in order to meet the labour demands. The readiness of graduates can only be based on coherent plans between institutions of higher learning and workplace learning.

The work-integrated planning system is effective across the globe and has been instrumental in equipping students with the necessary skills to be competent in their workplace. Internationally, WIL is used as a core strategy for technical, vocational, occupational and professional education and training. It always incorporates an amalgamation of formal learning (some of which may happen in a classroom) and real practical work. "WIL programmes typically include instruction in trade theory or professional knowledge, 'sheltered' practical training and 'real world' workplace experience. WIL is designed to get the best of both worlds; it uses institution-based training where appropriate, and work-lace-based practice where possible", Reinhard et. al (2016).

As was noted in the outlook on work-integrated learning across the globe, the synthesis is that the system is aimed at improving the skills and efficiency of students. This is very important in a world that is becoming increasingly technical every day. The use of institutions to further academic theory and host workplaces to equip students with exposure is fundamental in bridging the gap between theory and practice. From this, it is easy to deduce that there is a clear mandate to see academic theory and practical work as being equally important.

In the South African context, institutions of higher learning (universities and Technical and Vocational Education and Training (TVET)) are custodians of work-integrated learning. Sewell, Venter and Mason (2016) pointed out that the South African National Development Plan has charged institutions of higher learning with the role of offering necessary educational training for students to meet the demands of the workplace. In addition, universities are required to facilitate some vocational training for these students as a way of improving and addressing socio-economic disparities and enhancing the employment chances of new graduates (Sewell et al., 2016). This is because institutions of higher learning have a better chance of being intermediaries between students and employers in curricula that require vocational training as part of their prerequisite to completing. This puts the role of universities and employers directly into solving some of the challenges that South Africa is facing.

2.5.1. Types of learning

There are various types of work-integrated learning that have to be taken into consideration when developing a curriculum that will meet labour demand. The diagram below shows the different types of work-integrated learning systems that are dominant around the world. The systems are explained as they vary in nature, even though they serve the same function, i.e. to equip students with the necessary skills to be professionals in the workplace. According to SABPP (2014), work integrated learning requires understanding factors such as what the employer wants, logistics and the training that is required to meet the demand, as learning becomes more integrated with the needs of the world (Berryman, 1993). Thus, now more than ever, there is a greater need to integrate what institutions of higher education offer with what employers are looking for in order to make WIL as effective as possible.

South Africa has different types of work-integrated learning programmes which are offered to students. The diagram below outlines some of the most common ones.
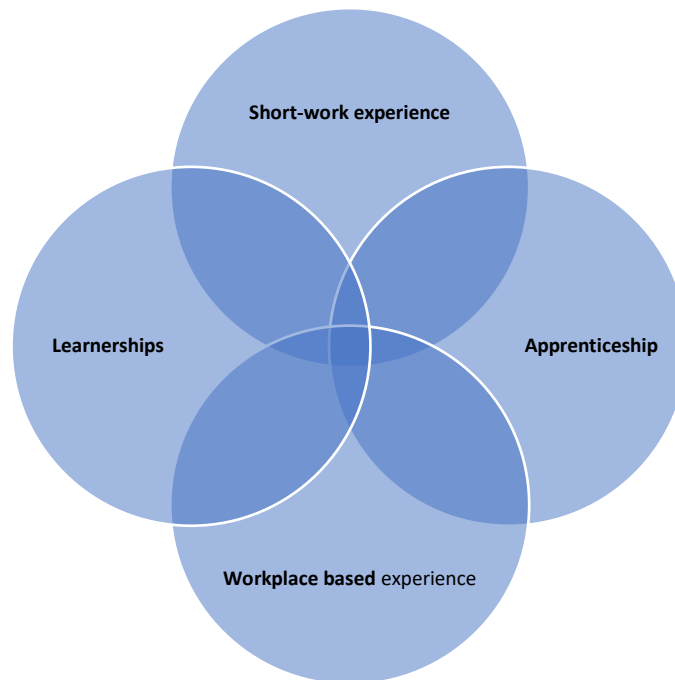
Figure 2.1: Different types of work-integrated learning programmes in South Africa

The diagram above shows four types of work-integrated learning: short-work experience, workplace-based experience, apprenticeships and learnerships. While there are distinctions between these types of work-integrated learning systems, all of them lead to one common goal: equipping students with the requisite skills to effectively execute their jobs. The predominant type of work-integrated learning system is **workplace-based** experience, because it is part of a curriculum that exposes students to real world experience, even though it is usually for a limited period. **Apprenticeships** are important in that employers are more hands-on in teaching students about the kind of work they do, with students getting a chance to practice at work. **Learnerships** are equally important because employers are more hands-on in the process, thus students acquire exposure. **Short-work exposure** is a limited time bound work exposure programme which is not as elaborate as the other types of WIL programmes.

To further expand on each of these initiatives, short descriptions for each are as follows:

    i.   A work placement allows students to learn more about a particular sector, company or job role, and apply their academic knowledge in a practical

working environment, giving them ideas of what they want to do as a future career. As part of their degree, they work in an organisation for an agreed amount of time to gain experience and develop professional skills to make them stand out from the crowd when applying for jobs in the future. During the placement, the experience and study combine into an integrated package where practical work and academic study enhance each other. Students can show employers that they can use their subject understanding to add commercial value, and demonstrate they can deliver on challenging projects that meet client demands.

ii.   An apprenticeship is a certain amount of time during which a person will be trained in a particular skill through real-world experience by working with someone who helps him learn.

iii. An internship can provide unique opportunities for learning outside of academic settings. It can expose you to new tasks and help you learn goal-specific skills to complete those tasks. Internships also give you experience with technology, people and projects that may relate to your career goals.

iv.   A learnership is a work based learning programme that leads to an National Qualification Framework (NQF) registered qualification. Learnerships are directly related to an occupation or field of work, for example, electrical engineering, hairdressing or project management. Learnerships are managed by Sector Education and Training Authorities (SETAs).

2.5.2. Motivation behind work-integrated learning

Many reasons have been put forward for the establishment of work-integrated learning in South Africa and across the globe. Hodges (2009) argued that the main motivation for introducing WIL is for the preparation of graduates/students to be fully effective and efficient in the workplace by improving their skills in theory and practice. There is agreement among some authors that despite some important lessons taking place in classrooms, the most essential skills are learned practically in the work environment (Hodges, 2009; Bates, Bates & Bates, 2007; Du Pre, 2009). Some of the most compelling reasons advanced for the establishment of WIL include the short- and long-term investments that are made in students to improve their skills, the gaining of exposure, and assisting in fighting socio-economic inequalities. Further, it is important

for students to have some sort of experience when they look for jobs, as research shows that students who possess practical experience are inclined to be appointed than those who do not. Consequently, through WIL, students have a platform to develop their skills and gain exposure.

The University of Technology which this study is premised on, has an overall office called Co-operative Education which coordinates WIL programmes across all faculties of the university. Co-operative Education is a philosophy of learning that is based on a partnership between the institution and its external stakeholders (industry) whereby the common objective is to provide the student with an enhanced learning experience in a workplace.

In essence, this is a three-way partnership in which the students alternate academic study with periods of work experience, during which they apply their learning in real-life situations under the supervision of experienced mentors in the work place as well as the guidance of academic staff from the institution. The work that is covered during this period is monitored and assessed according to requirements set out by specific departments. This type of learning is called experiential learning.

The role of the Co-operative Education Unit

- Establishing of strategic partnerships that result in the creation of experiential learning opportunities for students in the workplace. They collaborate with employers, youth organizations, national and international bodies, and all other interested stakeholders on matters relating to student employment.

- Ensuring that the Co-operative Education policy is implemented appropriately across the institution

- Ensuring that matters that affect the function of co-operative education and experiential learning, institutionally, are addressed

- Managing information pertaining to co-operative education

- Marketing (in collaboration with Marketing and Communication) the experiential learning program

It is evident that this programme is well located and ably led by the Director for Cooperative Education and Work-Integrated Learning and serves the interest of the students in creating partnerships that ultimately end in placements of students.

2.5.3. Case study

The case of Hendrik Janse van Rensburg (see Appendix B) showcases examples of students who are receiving workplace-based experience mixed with short-work exposure. The importance of such training may be downplayed because it is not easy to see the immediate benefits, however these students are acquiring greater exposure, which improves their school performance and their practical capabilities. This exposure enables them to become professionals because of the early intervention that is made to ensure that their skills are nurtured. The fact that these students can gain accreditation for the work they do during WIL shows how much value integrated learning can bring. The example of Hendrik Janse van Rensburg was hailed as a successful initiative that demonstrates a partnership among the three parties referred to in the case study. It is thus not a surprise that there has been such a radical shift to adopting WIL as a means of ensuring a smooth transition from university to the workplace for students across the globe.

The SABPP (2014) concluded that efforts should be made to recruit as many students through work integrated learning as possible to mitigate the shortage of skills the country is currently facing. Such an undertaking would, in turn, increase the skills pool of this group (the skilled). However, the findings of a study by Philips (2014) indicated that out of 264 responses from employers/organisations, only about 30 of the organisations had actually engaged institutions of higher learning to implement WIL. This means that organisations are unlikely to engage in work-integrated learning unless they are approached by institutions of higher learning. This is supported by the fact that 50% of the organisations involved in the study were not familiar with work-integrated learning.

2.6. Labour market demands

Barkhuizen (2005) argued that institutions of higher learning have a significant contribution in advancing the wealth of nations through intellectual mechanisms that can stimulate economies, capabilities, innovation and development. Institutions of higher learning have been bequeathed the right to impart theoretical knowledge to

students who will, in turn, become future professionals (Costley, 2007). However, it is equally important to understand that institutions of higher learning cannot effectively do this in isolation of employers; graduate students who come out of the system need to contribute their skills to the work environment. For graduate students to effectively do this, it is important for them to have the kinds of skills that the labour market is looking for. To this end, it is vital that tertiary institutions produce graduate students who have the kinds of skills that the labour market requires.

There is a growing awareness that recognises the need for a synergy between what is taught in institutions of higher learning and what employers are looking for. It has already been found by the World Bank (2014) that one of the drivers of youth unemployment is the misalliance of skills globally. This means that higher education institutions are placing an emphasis on skills that the labour market does not need, i.e. there is no synergy between labour market demands and the output of institutions of higher learning.

Extant research shows that education acquired at institutions of higher education does not necessarily mean that students are thoroughly prepared for the workplace (Griesel & Parker, 2009; Reinhard, 2006). Pop and Barkhuizen (2013) argued that in practical terms, the effort put in by institutions of higher learning does not suffice to prepare students for employment. As a result, new graduates are not regarded as ideal for the labour market because of their lack of practical exposure, skills gap and poor quality graduates (Scottish Higher Education Funding Council, 2003). With this in mind, it is imperative to understand the types of graduate students that the labour market is looking for in order to align graduate output attributes to the needs of the market. There is a need for institutions of higher learning to forge closer relationships with employers and to better understand the shifts in the labour market in order to mitigate the shortage of appropriate skills and make graduate placements easier. This speaks to the institutionalisation of the work integrated learning system.

It is equally important to make an early analysis about the relationship between labour market demand and what institutions of higher learning are offering to students. The most important point to tackle is whether university curricula should be guided by what the labour market wants. If it is the case that the labour market informs the curricula of institutions of higher learning, there would be no skills mismatch. However, this would

mean that universities would only exist to fill the gap within the labour market, which would make them unstable as labour market demands are not static. Therefore, institutions of higher learning should only collaborate with employers in order to mitigate the shortage of skills, and should not be driven by labour market demands. If labour market demands were fulfilled, it would mean that universities would cease to exist (Ferns, Russell & Kay, 2016).

It is equally important that employers work closely with institutions in order to make sure that they produce graduate students who are attractive to the labour market. This means that both institutions of higher learning, including Technical and Vocational Education & Training (TVET) institutions and universities, have equally important responsibilities when it comes to advancing the intellectual development of nations. As such, a move towards integrating universities and employers is the most tenable way of dealing with skills mismatches.

A study conducted by van de Merwe (2012) indicated that a synergy between the workplace and lectures is important in ensuring that students are competent in their field of work. One way of going about doing this is by assessing students at the workplace through performance assessments. Michener (2011) also pointed out that performance assessments in the workplace are crucial because they reveal the strengths and weaknesses of students, as well as areas to improve, so they can subsequently describe those to institutions of higher education. A case study on the Central Technology University's radiography curriculum led to certain improvements being made to the curriculum to incorporate where students had weaknesses. More importantly, it led to merging workplace and classroom activities, as well as the creation of an assessment toolkit to check if students are developing the required competencies (van de Merwe, 2012). The results of this study were important in that they showed how organisations can inform institutions of higher learning on how to design their curricula. This can mitigate the skills mismatches that are found within a profession.

A case study on the Landelahni graduate survey (see Appendix C) provides a clear picture of the mismatch of skills between what institutions of higher learning are producing in comparison to the types of skills that the country is short of. The results of the survey showed that there are insufficient technical degrees; that South Africa has a deficit of over 800,000 skilled workers in technical jobs; that there is a high

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dropout rate within certain degrees; and that South Africa imports most of its skilled workers from other countries.

Regarding the low number of Engineering and Information Systems students, the study found that the shortage of these skilled students is causing problems for economic growth. As highlighted earlier, universities have an essential contribution to make in advancing the nations' economy (Kruss, 2004; Barkhuizen, 2005). In this regard, the skills that are required by the country to drive economic growth are in short supply, i.e. a lot must be done to mitigate the factors that are causing this problem. One of these factors is the poor education system in South Africa, which is seen in the fact that students are performing poorly in major Engineering subjects such as Mathematics and Physics.

The shortage of skills has resulted in an estimated 800,000 shortfall in skilled workers with advanced skills (Burmeister, 2011). This phenomenon is underpinned by the fact that South Africa's workforce is dominated by intermediary skills rather than advanced skills. One of the major contributions to this that was highlighted by the Landelahni Graduate Survey is the fact that there is a high dropout rate among students pursuing technical degrees. The study also found that South African institutions of higher learning produce engineering degrees at a rate of only 14%, whereas other developing nations are at a rate of 38%. The statistics thus show that South Africa is lagging behind in the production of the quantity of engineers that the country requires in order to advance the economy. This is exacerbated by the reality that only one out of seven students completes their engineering degrees. This means the country is only left with one option, i.e. to import skilled workers. The findings of the study paint a worrying picture for the future of the economy.

The Landelahni Graduate Survey recommended that further research be conducted to produce accurate information pertaining to the criteria that employers look for in graduate students. This is because, as the study notes, institutions of higher education are not producing the kinds of skills that employers require (Burmeister, 2011). This is the void that this study sought to address; to ascertain what qualities employers are looking for in graduates. This will assist universities to produce the kinds of graduates that businesses are looking for. As the study noted, "Boosting the skills pipeline is one of the best ways to generate growth and address ballooning unemployment.

Each skilled professional has the capacity to create jobs on an exponential basis" (Burmeister, 2011:54).

2.7. Employers' expectations of graduates and graduates' expectations

The above sections have covered the critical issue of the skills mismatch that has contributed to the slowing down of South Africa's economic growth. As the preceding sections indicate, research suggests that WIL is one way of addressing this mismatch. However, in order to do this, it is important that a baseline of what employers expect from students is understood. Beyond skills, there are other factors that may make graduates attractive to the labour market. These could include work ethic, the ability to learn quickly, and having the right attitude towards work. It is equally important to know what students expect from the work environment, as their expectations could be unrealistic. Consequently, it is important to have synergy between the expectations of students and those of employers.

2.8. Students' expectations

Graduate students have many expectations when they leave institutions of higher learning, including the monetary and non-monetary benefits they might earn (Smith & Kruger, 2005). These benefits include financial and fringe benefit expectations. "Graduates categorise remunerative benefits into three main categories, namely: financial security (e.g. pensions, life assurance); financial assistance (e.g. subsidised mortgages, company loans); and personal benefits (e.g. compassionate leave, long service awards)" (Smith & Kruger, 2005).   These are the primary expectations that almost all students have before they enter the workplace across the world. Other expectations cited by Smith and Kruger (2005) include immediate employment; receiving training; having mentors; a long-term career plan; specific job characteristics; flexible hours and high salaries.

Some of these expectations are tenable and some are not, for example it is impossible to predict how long one would be employed for and what kinds of job a student will do. This is because new graduates are expected to be diverse and capable of doing any job that they are required to. In terms of flexible hours, it is not easy to break down what is meant by this, as students need to show professionalism towards their work and adhere to organisational rules.

A highly criticised tendency of graduate students is their belief that their qualifications will give them the highest salaries (Smith & Kruger, 2005). This is because students perceive their degrees to be a ticket to senior positions without any relative experience, whereas workplace/practical experience is the ultimate measure of higher salaries or senior positions at work.

In terms of finding a job, contrary to students' expectations, a study by Moleke (2005) found that only 60% of students find jobs immediately. Moleke also found that the institutions where students acquired their qualifications carry weight regarding whether they are immediately employed or not. The findings suggest that students from historically white institutions have better chances of being employed, than those from historically black institutions.

2.9. Employers' expectations

In a case study by Mthembu and Govender (2015), the authors found that 9 out 10 participants would support a youth employment wage subsidy in KwaZulu-Natal province. The foremost reason given was that a subsidy would go a long way in facilitating training by employers in right-skilling youth, and subsequently increase their chances of them gaining employment. The only participant who declined to support the initiative cited poor implementation as the main reason for not supporting it. Poor implementation processes have been cited as one of the gravest impediment obstacle faced by the South African governance system, as the country has good policies that have failed to materialise over the past 22 years. However, the fact that 9 out of 10 prospective employers agreed to the subsidy goes a long way to show that employers in KwaZulu-Natal are willing to work hand-in-hand with students to teach them skills that will make them more efficient in their professions.

The study also found that the subsidy that these companies would get was a motivation to consider work-integrated learning. It was noted that graduates indicate that most of the job opportunities that companies advertise usually require people who have some kind of experience (Mthembu & Govender, 2015), which disqualifies new graduates who do not have any experience. This means that government can increase the likelihood of students gaining employment by putting subsidies in place to encourage companies to hire graduates who have no experience.

A limitation of the research by Mthembu and Govender (2015) is that it is focused only on subsidies and has just one finding, i.e. that subsidies are a motivation for employers to hire students because of the exposure and money the employers will receive. The study failed to consider other factors that employers consider when hiring employees. This leaves scope to further probe the various attributes that employers expect from students besides subsidies and acquired skills. This is because subsidies are government issues and accurate skills are issues that have to be taken up with institutions of higher learning.

The point of departure between the expectations of employers and students is that employers want to hire students who have some kind of experience, and students hope to get some kind of training on the job. In addition, the fact that students expect to get senior positions and high salaries without experience also points to the confusion that lies between graduates expectations from their prospective employers and what they actually receive on their offers of employment. There is thus a need to reconcile the expectations that students have with the actual reality of the workplace.

CHAPTER 3
RESEARCH METHODOLOGY

3.1. Introduction

Most, if not all, research undertakings are grounded on underlying theoretical assumptions about what is regarded as valid and which research methods are appropriate for the development of knowledge in a given study. In conducting any type of research, it is prudent to unpack what these assumptions are. This chapter discusses the different methodological approaches used in research and the characteristics that underpin this particular research study.

Methodology is the orderly, theoretic scrutiny of the approaches useful to a particular field of study; it encompasses the theoretical analysis of the body of methods and principles associated with a branch of knowledge. Characteristically, "methodology incorporates concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques. A methodology does not set out to provide solutions, i.e. it is not the same as a method. Instead, a methodology offers the theoretical underpinning for understanding which method, set of methods, or best practices can be applied to a specific case, for example to calculate a specific result", (Bhattacherjee, 2012). Bhattacherjee also noted that in order to conduct scientific research, the researcher must be able to have both theoretical and methodological knowledge.

This chapter provides a context to the approach that informed this research study. In addition, it provides various reasons and justifications for selecting the methods that were utilised in this study. Rajasekar, Philominaathan and Chinnathambi (2013) defined research methods as the main techniques, procedures and processes (including data collection techniques) that are undertaken by a researcher when conducting research. These can be qualitative and/or quantitative in nature. Research methodology, on the other hand, is the systematic mechanisms that are used to navigate or get to the core of the problem being addressed by the researcher.

3.2. Definitions of research methods

The pathway to discovering answers to research questions constitutes research methodology (Kumar, 2011). There are two types of prominent research methods that are used in conducting research – qualitative and quantitative. "Quantitative and

qualitative research methodologies differ both in their underpinning philosophy and, to some extent, in the methods, models and procedures used. Although the research process is broadly the same in both, quantitative and qualitative research are differentiated in terms of the methods of data collection, the procedures adopted for data processing and analysis, and the style of communication of the findings" (Kumar, 2011). A third approach – the mixed method approach – is complex in nature and assumes some characteristics from both the qualitative and quantitative research methods. This study undertook a mixed method approach to solicit both quantifiable and narrative responses from respondents.

3.2.1. Qualitative research

Qualitative research is "concerned with developing explanations of social phenomena. That is to say, it aims to help us to understand the social world we live and why things are the way they are" (Hancock, Ockleford & Windridge, 2007). The qualitative research method is widely regarded as a method that is based on the explanatory nature of the phenomenon that is being studied, with the objective of coming up with a rich, descriptive and presentable picture of the study. It is essentially embedded in the relationship between the phenomenon and how people conceive or interpret it to be in their experience (Maree, 2007).

Various factors inform qualitative research, such as people's cultures, which thus requires the researcher to be more attentive. As a result, qualitative research is in-depth in its description of the phenomenon being studied. Qualitative research is vested in the epistemological realm because it deals with knowledge and how we come to know and understand the world. Creswell (2014) pointed out that qualitative research is underpinned by what has been constructed in the world, while Maree (2007) emphasised that qualitative research rests on people's behaviors and group systems, as well as their interactions in the world.

The characteristics of the qualitative research approach can be summarised as per the below:

- Written words as opposed to quantifying This happens both in the data collection stage and during the analysis of the data collected.

- It is vested in an inductive approach/method when focusing on the integration of theory and research. It is essentially aimed at producing results rather than seeking to be for or against a theory.
- It focuses on the way that people interpret the world.
- It acknowledges that the world is not constant but is forever changing, and that new interpretations emerge in the process (Bhattacherjee, 2012).

3.2.2. Quantitative research

Stone-Romeo, (2002) states that "quantitative research is fundamentally vested in the relationship between two variables: an independent variable and a dependent variable". A dependent variable is the variable that is being studied, tested or measured, while an independent variable is the variable that can be changed, adapted and controlled. The relationship between the variables is represented through numbers in order to quantify the relationship. In everyday usage, quantitative methods generally utilise ratings, tests, scales, questionnaires and measures (Stone-Romero, 2002).

The core difference between quantitative and qualitative studies is thus that qualitative research presents data in words, whereas quantitative research presents data in numbers through charts and graphs (Creswell, 2014). In summary, quantitative research is vested in the following:

- The measurement/quantification of information in the data collection and data analysis stage.
- Is based on deductive methods relating to the theory and research. As a result, quantitative research is mostly vested in testing a hypothesis or theory.
- Emphasises natural sciences, but does not neglect practices and norms.
- Considers social reality as something that is out of our realm and has its own objective reality (Bryman & Bell, 2011).

In this study, quantitative sets centered on the data from a survey directed to alumni of the selected University of Technology were used to derive findings, which are discussed later.

Bryman and Bell (2011) created a table to summarise the distinctions between qualitative and quantitative research. As can be seen, there are fundamental differences when it comes to the orientation of these research approaches.

Table 3.1: Fundamental differences between the quantitative and qualitative research approaches

Areas	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive, empirical testing of theory	Inductive, generation of theory from data
Epistemological orientation	Natural science model, in particular positivist	Interpretivist
Ontological orientation	Objectivist	Constructionist

(Bryman & Bell, 2011)

3.2.3. Mixed method research

Mixed method research has become increasingly attractive to many researchers because it offers the ability to utilise both qualitative and quantitative research simultaneously. The power of the mixed method is that it supplements both qualitative and quantitative research with tools that will help produce a good study. The ability to both show data in graphs or charts and describes the relationship between what participants said and what the quantitative data show, is powerful. Creswell (2014) pointed out that mixed method research is quite new within the domains of social sciences and human sciences, as it is based on the utilisation of qualitative (open-ended) and quantitative (closed-ended) questions of the study.

The method that was utilised in this study was the mixed method approach. The decision to use this approach was motivated by the researcher's need to quantify the number of graduates who were employed and those who were unemployed. It was also important to establish a link between their employment status and the impact of the WIL programme in equipping students with skills that increased their probability of securing employment.

Spector (2005) advocated that mixed method research is recommended because inasmuch as either qualitative or quantitative research can do the job, mixed method research goes further if the researcher seeks to dig deeper.

3.3. Research methodology and research design

Research methodologies are important for identifying the ways in which a researcher can go about undertaking a study and answering research questions. Creswell (2014) held that qualitative research gives a researcher tools that can help with their study. It has already been pointed out that qualitative studies are often descriptive and explanatory, however this results in research that neglects evaluation. This research thus incorporated the qualitative approach in an effort to evaluate what was being studied, in other words it evaluated the roles and functions of the Work-Integrated Learning Office in engaging with students and host employers with whom the students undergo in-service training.   This required the participants to substantiate their answers.

3.3.1. Types of research design

Qualitative research design questions are based on "interrogative statements that raise questions about the relationship among variables that the investigator seeks to answer" (Creswell, 2014:247). Qualitative research, as a method of enquiry, began being noticed and used at the beginning of the 1970s. It was most often used by sociologists and anthropologists because of its epistemological nature, and was later adopted by researchers in the fields of human sciences and social sciences, such as philosophy and psychology (Taylor & Bogdan, 1998; Creswell, 2014).

Qualitative research designs vary according to the approaches utilised by different researchers. The most dominant approaches are narrative research, ethnography and grounded theory (Creswell, 2014). The various approaches are discussed here in order to illustrate the different reasons they are used, in other words, different research designs are utilised for different kinds of results, depending on what is being studied and how the researcher can get the most from the phenomenon under investigation (Bryman & Bell, 2011). The different research designs found in qualitative research include the below:

- Narrative research: The researcher is historically focused and collects information and data regarding the life of an individual by asking probing questions about the lived experience of the person being studied (Riessman, 2008). The information that emerges out of the data collection is presented from a narrative/storytelling perspective. The information, therefore, has to be

presented accurately, because it involves a person's lived experience and must be represented as it was told in order to give a coherent picture.

- Case studies: These are amongst the most common types of research in the 21st century as they have a particular focus. Case studies are informed by a group/entity that shares similar functions, patterns or organisations. The researcher goes out to study one or more groups that can be clustered under one domain and engages in data collection on the entity that is being studied.

In this study, the researcher seeks to better comprehend the effectiveness of the WIL programme and its ability to equip students with relevant skills and competencies, which would increase their employability after graduating. The researcher has observed over time and also read about the increase in graduate unemployment, which is a growing trend in South Africa, and wanted to assess the extent to which programmes such as WIL can be utilised to bridge the gap between theoretical learning and experiential learning.

3.4. Data collection techniques

This section details with all the major sources of information that played a crucial role in this study, as well as the primary and secondary data collection techniques deployed to collect and collate data. The data gathering process and methods include the distribution of a questionnaire and interviews with staff at the WIL Office at the selected University of Technology as one of the data collecting tools. Quantitative research, the second research method of this study, has three principal methods of collecting data: interviews, direct observation and written documents (Patton, 2002).

3.4.1. Population and sampling

The study was undertaken with the assistance of the Alumni Office of the selected University of Technology. Purposeful sampling was used to categorize and narrow down the list of participants for this research study. Purposeful sampling is "widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest" (Palinkas, 2014). The University of Technology under investigation is the only source which could provide answers to the research questions that were posed. They are the custodian of information which would formed

the base for the study. It is for this reason that purposeful sampling was used to narrow down the participants in the study.

Triangulation is a method used to increase the credibility and validity of research findings. Credibility refers to trustworthiness and how believable a study is; validity is concerned with the extent to which a study accurately reflects or evaluates the concept or ideas being investigated (Cohen et al, 2000). Joppe (2000) argues that triangulation, by combining theories, methods or observers in a research study, can help ensure that fundamental biases arising from the use of a single method or a single observer are overcome. "Triangulation is also an effort to help explore and explain complex human behaviour using a variety of methods to offer a more balanced explanation to readers" (Joppe, 2000).

An online questionnaire and consent forms were distributed using blind emails to the alumni distribution list. This was done in order to broaden the pool of questionnaires distributed with the probability of receiving 70 to 80 responses. The questionnaire was purposefully distributed to graduates who had completed their studies between 2008 and 2011. The purpose of distributing the questionnaire to the selected group was to establish their current employment status and to ascertain how long it took for them to find employment after undergoing the WIL programme and graduating.

3.4.1.1. Work Integrated Learning Office

In accessing information pertaining to experiences of past students on the WIL programme from the university, a relationship had to be established with key administrators at the university. Key to this investigation were the WIL Placement Director as well as the Director of Alumni.

WIL Placement Director: The WIL Placement Director, who is responsible for partnerships with employers, was interviewed. The WIL Placement Officer had the most in-depth information about the functioning of the WIL programme, the current partnerships that are in place, feedback from employers and relationship with students, as well as the challenges that the office faces when it comes to the work preparedness of students.

Alumni Director: The Alumni Director played a vital role in the study because she provided access to the database of alumni which enabled the study to take place.

3.5. Ethical clearance

- The research was presented by the Faculty Research Office to the university Research Ethics Committee and accepted. Ethical permission was solicited and attained from the university's research office (Annexure 1). Each study participant who took part in the study knew that the university ethics committee had granted permission for the study be conducted.

- Gatekeepers' letters (Annexure 2) were received from the selected University of Technology that formed part of this study. All documents relating to ethical matters are attached separately as additional annexures.

3.6. Data sources

According to Patton (2002), three methods of data collection are associated with qualitative research: direct observation, interviews and written documents. However, there is another method not mentioned by Patton, i.e. audio and visual materials. Creswell (2014) asserted that these materials refer to data that are made up of pictures, recordings and websites. Interviews happen when the researcher/interviewer asks questions of a participant or group of participants/respondents, with the aim of gathering information concerning what is being studied (Kvale & Brinkmann, 2009), while observation takes place when a researcher goes into the field to watch and take notes on a group of people while observing their behavioural patterns. Lastly, documents as a form of data collection come in various forms such as newspapers, government documents and others. These help the researcher to acquire detailed information about what is being studied.

3.6.1. Distribution of questionnaire

The researcher designed a questionnaire (Appendix F) to elicit responses that would assist in analysing the value that the WIL programme brought to their employment journey. The targeted population was students who had graduated from the university across all faculties. This was done intentionally because the researcher wanted to ascertain from the responses received which faculties produced students that were absorbed by the labour market immediately after graduating or completing the WIL programme, and which had students who struggled to attain employment even though they had undergone the WIL programme.

The questionnaire comprised open-ended questions as well as closed-ended questions. This approach was used in designing the questionnaire because the researcher wanted the respondents to be able to answer the direct questions, as well as have the flexibility to elaborate on their responses should the need arise.

A consent form (Appendix D) and questionnaire were distributed to the alumni of the University of Technology. The purpose of distributing a consent form was to seek consent from the respondents to commence with the questionnaire. The consent form also clarified the rationale the study to the potential respondents. The questionnaire contained 21 questions in total and were divided into three categories. The first category was on personal information, with the questions being designed to elicit details about the respondents regarding their age, gender, race and study background. This assisted in the coding process, which will be explained in the analysis section of the dissertation.

The second category was on the WIL programme. These questions were asked in order to understand the respondents' experiences after having gone through the programme. The questions were intended to assist with establishing the extent to which the WIL programme had or had not assisted in equipping students with skills that prepared them for the labour market. The last category of questions focused on employment in order to establish the respondents' employment status and its alignment with the qualifications they had acquired. These questions were also meant to evaluate how long it took the alumni to find suitable jobs after they graduated and whether the experiential learning received through the WIL programme acted as a catalyst for employment through the skills acquired in the programme.

3.6.2. Interviews

Some of the data for this research were collected using in-depth, semi-structured interviews with staff at the WIL Office at the selected University of Technology. This was because the nature of the study required responses from those employees at the WIL Placement Office who were involved in the recruitment of students, in order to elicit their opinions on the effectiveness of the programme. The interview was with the Director of the WIL office.

Interviews are useful in that they allow the researcher ample space and time to ask probing questions and seek clarification. The use of open-ended questions was

important in that it allowed for the flow of new ideas and information to emerge from the interview process.

The interview occurred face-to-face with the WIL Placement Director on the 6 March 2017 in Cape Town after an appointment was made via email and telephone. Kvale and Brinkman (2009) noted that qualitative interviews occur face-to-face, telephonically or in focus groups. To ensure alignment with the research process, the interview questions were linked to the objectives of the study. alignment . Interviews are advantageous because they offer the researcher and interviewee time to engage on issues that documents or reports might not have covered or explained sufficiently.

The qualitative component of the research comprised interviews with staff at the Work Integrated Learning Office of the selected University of Technology. This ensured that primary data were collected from the actual source. Welman et al. (2005:60) asserts that, "the word qualitative implies an emphasis on processes and meanings that are rigorously examined, or measured in terms of quantity, amount or frequency". This phase of the study, as outlined in the objectives, aimed to assess and evaluate the extent to which the Work-Integrated Learning Programme meets its objectives and prepares students with the practical skills that are required by employers who are recruiting new graduates. The structured face-to-face interview assisted in establishing the link between the curriculum and practical work experience that students gain through the WIL programme. The interview was recorded using a Dictaphone and was later transcribed in order to be analysed and interpreted. The interview comprised 10 detailed questions, the answers to which are analysed and expanded on in the next chapter.

For the purpose of this study, a semi-structured interview was conducted (Kumar, 2011). This form of interview question enables a flow of new ideas or information to emerge from the interview process. Semi-structured interviews are also beneficial because they allow the respondents to give detailed information and not be limited by the research questions. Another important factor about semi-structured interviews is that they often give the researcher new information, which could be pivotal in shaping the findings of the research study through relevant and up-to-date information.

The interview was conducted in English in the WIL Office of the selected University of Technology on 6 March 2017. The duration of the interview was 60 minutes. The

researcher constructed the interview questions grounded on the objectives of the study and the literature that was reviewed. It is always best that the researcher asks questions that have never been asked before in order to contribute effectively to the field. The interview questions are attached as Appendix 4.

3.6.3. Secondary data

Many kinds of secondary data were used in this study, such as literature on the human resource development strategy of South Africa, previous research on WIL, unemployment and graduate attributes, legislative papers and policy documents. One of the most important advantages of secondary data is that they are mostly stored in documents that are accessible and therefore save time for the researcher (Creswell, 2014). The secondary data documents were also useful in navigating the literature on graduate unemployment in South Africa. Further secondary data were acquired from dissertations, theses and publications on unemployment and labour market demands in South Africa.

3.7. Data analysis

The role of data analysis in research is to get a clear picture of the relevant data that have been collected from participants, documents and so forth. This is because not all the data collected are presented in the findings of the study, meaning that only the most relevant data are used (Creswell, 2014). Thematic analysis was used in order to arrange the information in terms of the themes that emerged from the findings of the research. The identification of themes comes from the concepts, ideas and phrases that frequently appear in documents or are used by participants (Taylor-Powell & Renner 2003).

Content analysis was used to study the selected literature, reports and policy documents. Bryman and Bell (2011) defined content analysis as the analysis of written documents, texts and visuals to elucidate themes that emerge and their meaning to the study at hand. In the entire evaluation framework that the researcher adopted, content analysis played an important role because legislative, administrative and regulatory frameworks were documented.

Data analysis is a vital aspect of research methodology because it allows one to thoroughly work with raw data and reduce them to findings that are in line with the

study. This is because, as noted by Creswell (2014), not all the data collected are presented in the analysis chapter. This is different from quantitative analysis, where all the data have to be presented in the findings of the study. Taylor-Powell and Renner (2003) argued that good data analysis is based on a researcher's understanding of the data collected, in other words, it is important for the researcher to take the time to be familiar with the findings that emerge, as well as how they relate to the objectives and questions of the study.

The interpretation of the data and their analysis was done in a way that integrated the findings with the literature and policy documents. The data that were collected through the questionnaire were used and merged with thematic analysis, which denotes an exploration of themes that are crucial to understanding what is studied (Daly, Kellehear & Gliksman, 1997). The thematic analysis was based on four themes that were used to evaluate the effectiveness of the WIL programme, with a focus on the role and mandate of WIL, the scope and partnerships of WIL, graduate employability post the WIL programme, and the effectiveness of the WIL programme. The main focus of the analysis was the sub-themes that emerged under these themes.

The data were analysed through the use of AtlasIT, which is software that enables researchers to rationalise data and interpret them accordingly. This helped in understanding the different views of the participants. It is imperative to ensure that the themes of a study are attached to the broader aims and objectives of the study, in order to present relevant findings. One of the best ways of going about this is through the following:

- Identifying and assessing themes, sub-themes and patterns that dominate the ideas emphasised by participants. These can be "ideas, concepts, behaviours, interactions, incidents, terminology or phrases used" (Taylor-Powell & Renner, 2003).

- Organising data in a way that illuminates the construed meaning behind the sub-themes and how they are linked to the broader themes of the study.

- Revealing the relationship between the themes, sub-themes and the literature to elaborate on how the findings integrate with the aims of the study.

Through the utilisation of thematic analysis, the idea was to compress all the findings of the study into categories that made sense, in other words, the themes and sub-themes represent the findings of the study based on what the informants had to say.

3.8. Reliability, validity and trustworthiness

The issue of reliability is one of the most contested issues amongst contemporary research scholars. This is because, as noted by Bryman (2004), some researchers have undertaken to use reliability and validity in the same way as quantitative researchers. In general terms, reliability, validity and the ability to use research to generalise are key ways of measuring the importance and quality of research. Similarly, in this research, it is important for the findings to be considered reliable and valid, and most importantly, for the findings to be applicable to WIL programmes initiated by the various universities of technology within South Africa.

Alternative measures have been developed to create space for qualitative researchers to understand the impact of their research through its trustworthiness and authenticity. Trustworthiness and authenticity were first introduced by Lincoln and Guba (1985) as alternatives to reliability and validity, which are mostly seen in quantitative research. Trustworthiness of information indicates that the research is credible to the extent that other researchers can use it. The data that were gathered for this research had to be in line with, and be presented in such a way to reflect, authenticity and trustworthiness.

Triangulation was used to build a clear picture by assessing different sources/data from participants and comparing them for trustworthiness. Bryman and Bell (2011) and Creswell (2014) defined triangulation as a way of verifying data by utilising various methods of investigating the sources of data that the researcher utilises in a study. Triangulation is effective in that it takes responses from different participants and seeks to assess the accuracy of the data collected by comparing them with other data sources.

Creswell argued that "if themes are established based on converging several sources of data or perspectives from participants, then this process can be claimed as adding value to the validity of the study" (2014:201). Regarding the study at hand, this would add to the trustworthiness of the data, which would subsequently lead to the research being considered authentic. To meet the required standards, the researcher undertook to assess all the data collected and verify them through studies conducted by other

scholars and the history of WIL and graduate unemployment internationally. The researcher also confirmed the credibility of the data by conducting follow-up discussions with participants based on the findings that emerged from the study. Through this process, the researcher was able to collate credible data that were verified by the different sources in the study.

3.9. Conclusion

This chapter described the research methodology that was utilised in this study. The following chapter focuses on analysing the data that were collected through the administered questionnaire and interview.

CHAPTER 4

DATA PRESENTATION AND ANALYSIS

4.1. Introduction

This chapter deliberates on the findings based on the analysed data to address the aims and objectives of this study. Eighty participants, who were either employed or unemployed alumni from a selected technology-focused university, were asked a few questions using a questionnaire that sought to explore and answer the research question, i.e. whether the WIL programme equips University of Technology students with adequate skills for the workplace and whether the courses they apply and study for are relevant to the demands of the labour market. To answer these questions, the study quantitatively and qualitatively explored the participants' perceptions of their skills in relation to their current or past WIL experience.

By analysing the participants' responses, this study aimed to realise the following objectives:

- Assess and evaluate the extent to which the WIL programme meets its objectives and provides students with the practical skills that are required by employers when recruiting new graduates.

- Establish what additional competencies and skills over and above a formal qualification are required by the labour market when employing graduates.

- Examine what programmes or initiatives the selected University of Technology could introduce to provide graduates with the attributes required by the labour market, which are not contained in the curriculum as it is currently structured.

4.2. Quantitative data analysis

The data from the survey were statistically analysed using SPSS version 25, and the qualitative data were analysed thematically using Atlas.ti version 8. The findings were guided by the questions posed in the surveys and interview. The content of the questionnaire ranged from asking for demographic information to ascertaining the respondents' opinions about WIL. The content of the qualitative interview covered questions related to understanding the skills, expectations and readiness of students for WIL programmes and employment. This section begins with an analysis of the quantitative data, followed by an analysis of the qualitative data.

4.3. Demographic data

Descriptive statistics were used to make sense of the demographic information of the students in the WIL programme. Although the demographic and background data of the participants were not central to the study, they did help to contextualise the results and assist in making sense of whether these have any influence on WIL challenges.

4.3.1. Gender of participants

To start the survey, the participants were asked what gender category they were in (male or female). Of the 80 alumni that responded to the survey, 48.75% (N=39) were male and 51.25% (N=41) were female. Figure 4.1 visually displays the number and percentage of males and females making up the sample.
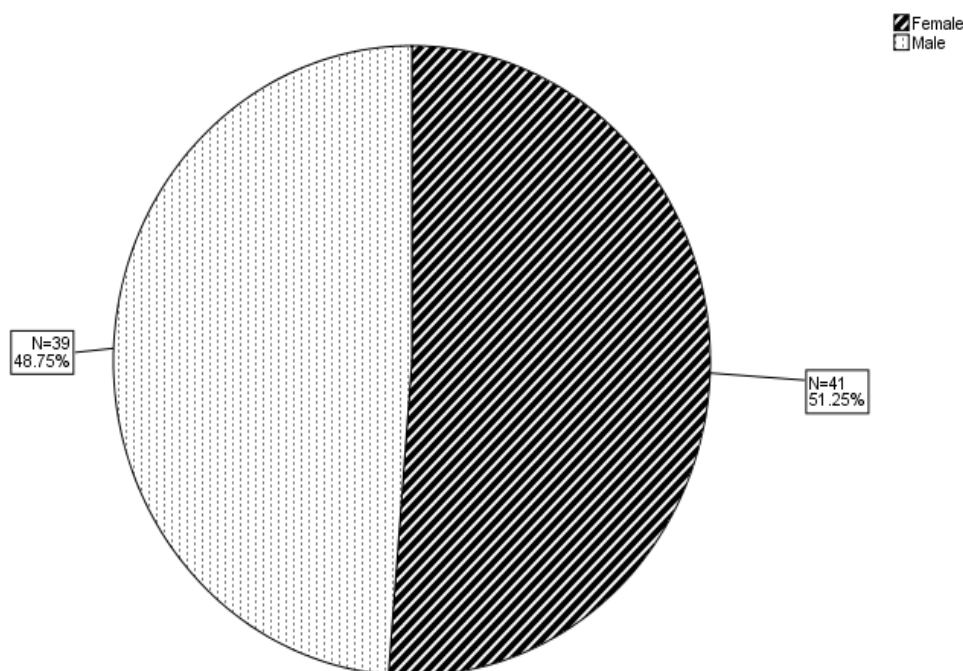
Figure 4.1: Number of male and female participants in sample

4.3.2. Race of participants

Regarding racial demographics, 53.75% of the participants identified as "Black" (*N*=43), followed by 25% who identified as "Coloured", 11.25% as "Indian", and 10% as "White". None of the participants identified as "Other". Table 4.1 shows the racial composition of the participants.

Table 4.1: Number of participants according to their identified racial groups

Race	N	Percent (%)
Black	43	53.75
Coloured	20	25
Indian	9	11.25
White	8	10
Other		
Total	80	100

4.5. WIL background details of participants

The next section covers the participants' study and employment status with regard to the WIL programme.

4.5.1. Status, study duration and graduation of participants during their WIL programme

Of the 80 participants, the majority (N=74, 92.5%) were full-time students at the time of their participation in the WIL programme; only four (5%) were part-time students. Two did not indicate whether they were full-time or part-time students at the time they participated in the WIL programme. When participants were asked how long it took them to complete their studies, 47 (N=47), making up 60% of the sample, indicated they took three years, while 26 (33.8%) took four years (N=27) and 4 (N=4) (5%) took five years. Interestingly, a cross analysis of the participants' student status at the time of the WIL programme together with their study duration revealed that most of the students (N=46, 63%) who studied full-time took three years to complete their studies, while 25 (34.2%) and 2 (2.7%) of the full-time participants completed their studies in four or five years (respectively). Of those who studied part-time, only one participant completed their studies after three years (25%) and one (25%) completed in four years, while two (50%) completed their studies in five years.

Table 4.2: Participants' student status during the WIL programme participation and the duration of their studies

			Duration to complete studies			
			3 years	4 years	5 years	Total
Offering	Full-time	N	46	25	2	73
		%	63%	34.2%	2.7%	100%
	Part-time	N	1	1	2	4%
		%	25%	25%	50%	100%
Total		N	47	26	4	77%
		%	61%	33.8%	5.2%	100%

Table 4.3 indicates that the majority (*N*=25, 31.3% and *N*=24, 30%) of participants (*N*=77, which excludes those participants who did not indicate their student status) graduated in 2014 and 2015 respectively, while the remaining students graduated in 2011 (*N*=1, 1.3%), 2012 (*N*=2, 2.5%), 2013 (*N*=12, 15%) and 2016 (*N*=16, 20%).

Table 4.3: Range of years in which participants graduated

Year	N	%
2011	1	1.3
2012	2	2.5
2013	12	15
2014	25	31.3
2015	24	30
2016	16	20
Total	80	100

4.6. WIL programme data and questions on WIL programme

This section presents the background data associated with the participants' employment status, their insights of the WIL programme, and their perceptions of skills they acquired.

4.6.1. Job sector placement

The participants were asked a number of questions connected to their perceptions of the WIL programme as well as their current employment status. One of the questions asked related to the sector their university placed them in, if it had assisted them in the

placement process. A large number of the participants were placed in the public sector (*N*=42, 52.50%), with most of the others being placed in the private sector (*N*=31, 38.75%). Five of the participants were placed in non-governmental organisations (NGOs) (*N*=5, 6.25%) and two in other sectors (*N*=2, 2.50%), as shown in Figure 4.2.
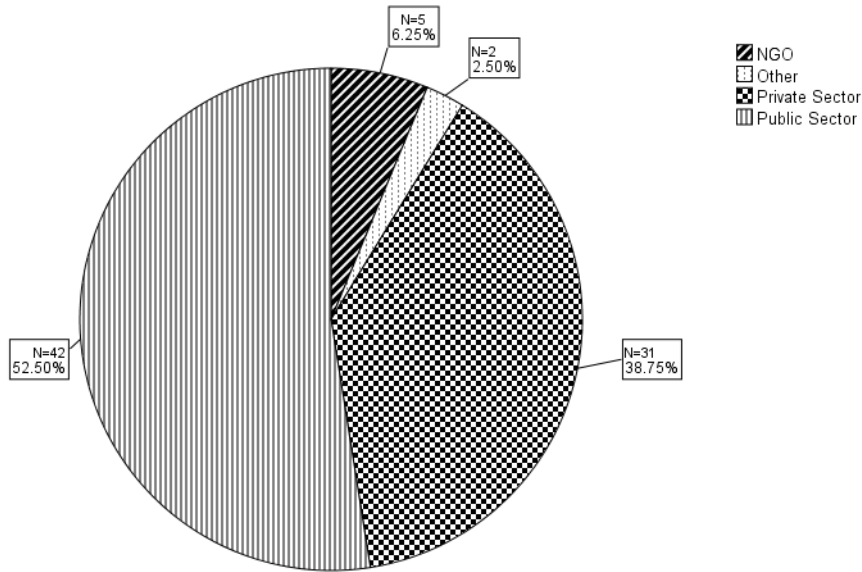
Figure 4.2: Sectors that participants were placed in

4.6.2. Employment at host institution

Of the 80 participants, only 12.66% (*N*=10) were unemployed at the time of the study, while 83.54% (*N*=66) were employed. Just 3.80% (*N*=3) were self-employed. Interestingly, of the 42 graduates placed in the private sector, 73.81% (*N*=31) were offered employment after their WIL programme placement time ended. Of those, 70.97% (*N*=22) were offered fulltime employment, while two (40%) from the NGO and one (50%) from the other sector were offered employment. The rest of the participants were not offered employment (see Table 4.4 below).

4.6.3. Employment offers for participants in each sectors

Table 4.4: Number of participants within the different sectors who were or were not offered employment at their host institutions

			Offer of employment		
			Not offered employment	Offered employment	Total
Institution	NGO	N	3	2	5
		%	60%	40%	100%
	Other	N	1	1	2
		%	50%	50%	100%
	Private Sector	N	9	22	31
		%	29.03%	70.97%	100%
	Public Sector	N	11	31	42
		%	26.19%	73.81%	100%
Total		N	24	56	80
		%	30%	70%	100%

4.6.4. Relevance of skills learnt

The participants were further asked how relevant they thought the skills that they had learnt from the WIL programme were for their career advancement.
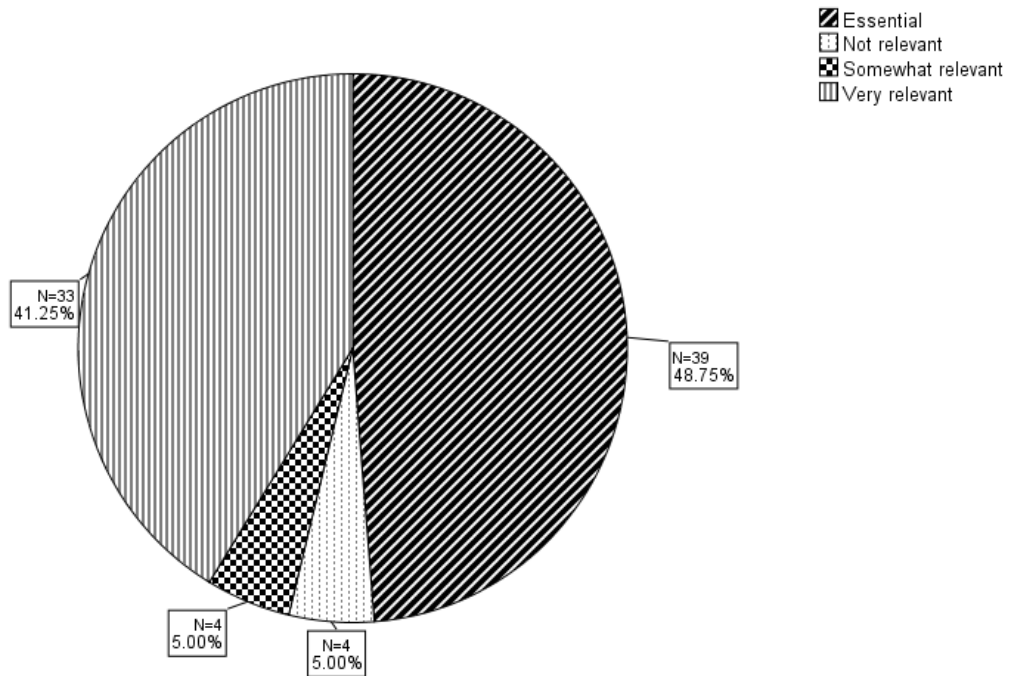
Figure 4.3: Participants' perceptions of the relevancy of the skills they learnt in the WIL programme

Just under half of the participants, that is 48.75% (*N*=39), thought that the skills they had learnt were essential to their career advancement, while 41.25% (*N*=33) thought they were relevant. The remaining participants (both at *N*=4, 5%) either thought they were somewhat relevant or not relevant at all. Table 4.5 presents the participants' differing perspectives.

4.6.5. Alignment of current career to qualifications

Table 4.5 shows the extent to which the participants indicated that their current employment was aligned to their qualification. This shows that 83.75% (*N*=67) of the 80 participants agreed that their current careers were aligned to their qualifications, while 12.50% (*N*=10) thought otherwise and 1.25% (*N*=1) were not sure.

Table 4.5: Participants' perceptions of the alignment of their current careers with their qualifications
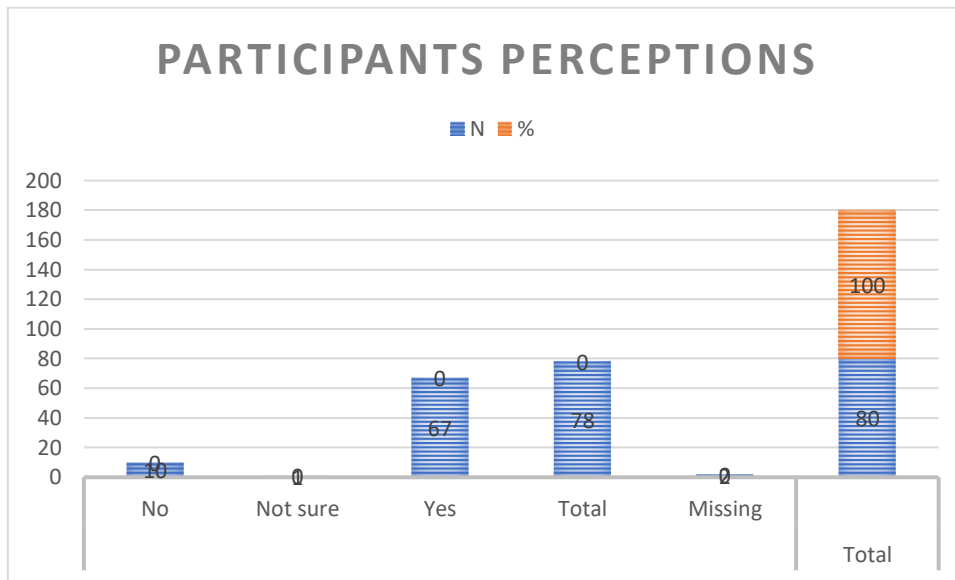
4.6.6. Perceptions of work preparedness and WIL assistance in work fulfilment
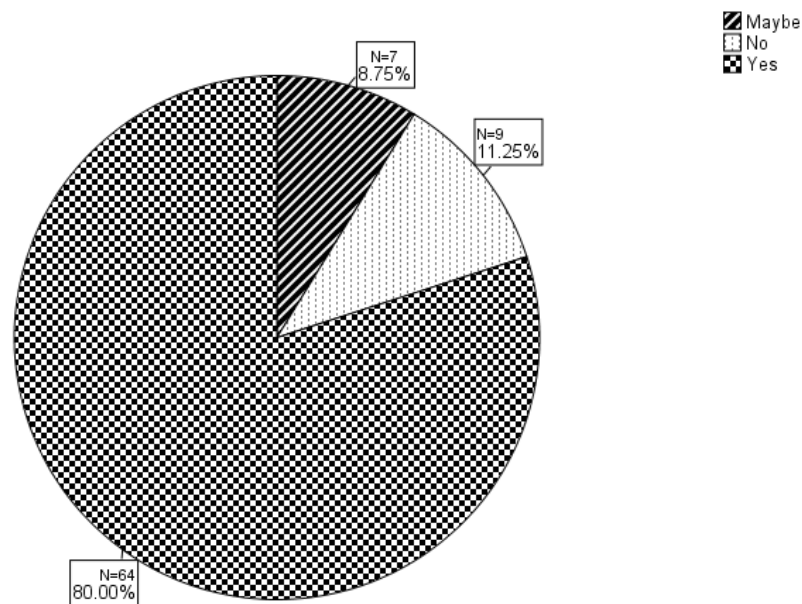
Figure 4.4: Participants' perceptions of their preparedness for the working world

The participants expressed their views on the extent to which they felt or thought the WIL programme prepared them for the working world: 80% (*N*=64) felt that it did prepare them, while 8.75% (N=7) thought that it might have prepared them and 11.25% (*N*=9) simply said it did not prepare them. Furthermore, 87.50% (*N*=70) felt that the

WIL programme assisted them in fulfilling their current work role, three (3.75%) said they were not sure if it did assist them, and seven (8.75%) felt it did not assist them.

4.6.7. Current work satisfaction

A sizable   percentage of the participants who were employed felt satisfied with their current employment (N=63, 92.65%), as did the three who were self-employed (N=3, 4.41%). Of those who were unsatisfied, three (27.27%) were employed and eight (72.73%) were unsatisfied.

Table 4.6: Participants' satisfaction with their current employment

			Employment status			
			Employed	Self employed	Unemployed	Total
Satisfaction with current employment	Unsatisfied	N	3	0	8	11
		%	27.27%	0%	72.73%	100%
	Satisfied	N	63	3	2	68
		%	92.65%	4.41%	2.94%	100%
Total		N	66	3	10	79
		%	83.54%	3.80%	12.66%	100%

4.7. Qualitative data analysis

This section highlights the qualitative data, and in particular the themes that emerged to support the quantitative data, from both employed and unemployed past WIL programme students. It is made up of data thematically analysed from an interview with a WIL programme director at the identified University of Technology. One interview was conducted because it was believed that it would produce rich data from an individual who had a good understanding of both perspectives (the WIL programme and employers), and could therefore give opinions taking both perspectives into consideration. The interview took approximately 60 minutes and questions centred on the readiness of students for the workplace, where the programme can improve, and other related questions investigating the effectiveness of the WIL programme. The interview was audio-taped with consent, transcribed and stored for analysis.

In order to explore and examine the data in a way that would assist in answering the research question(s), a thematic analytic approach was taken. This analysis was chosen as it is often considered a flexible, academically acceptable approach that allows for a rich description of data (Braun & Clarke, 2006).

Before analysing the thematically arranged data, some of the open-ended questions responded to by the past WIL programme participants are detailed.

4.8. Participants' faculties

Many of the participants indicated which faculties they belonged to. To get an indication of the most and least common faculties mentioned, the related open-ended questions were coded and grouped. The majority of the participants (N=44) belonged to the Business Faculty, followed by the Faculties of Informatics and Design (N=13), Applied Sciences (N=7), Engineering (N=6), Health and Wellness (N=5) and Education (N=5).

4.9. Thematic analysis

Focusing on the interview, a number of themes emerged:

- Employers' perceptions of in/outgoing students;

- Employer participation as a tick box;

- Student placement carefully considered; High student expectations leading to disappointment in workplace.

4.9.1. Employers' perceptions of student workplace preparedness

Employers involved in the WIL programme do not always give feedback. Of the 70% to 75% who often do give feedback, their views on the workplace preparedness of students were frequently conflicting, as some had positive reviews on students' readiness, while others thought otherwise:

> *'Most companies, let me say about 70 to 75 percent of companies the feedback that we receive from them, they feel that our students are ready for work but some companies feel that our students are not ready for the working world and they still behave as students in the workplace and they don't take it seriously.'* (WIL Director)

4.9.2. Employer participation as a tick box

Whereas for some companies, the task of giving feedback is something they find no problem doing, other companies choose not to communicate and only bring students into their spaces for work experience under the false pretence of caring for the development of students. For them, the purpose of accommodating students is merely for ticking their own tick box. This point was highlighted by the WIL Director:

> '…*also most companies don't give feedback at all, they just receive students and don't get back to us with the feedback, they are not really bothered on how the students are and what the students can improve.*' (WIL Director)

4.9.3. Active involvement and careful placement of students by WIL staff

In their interactions with different companies, WIL programme developers seem to put in the time and effort to actively involve themselves in the process of carefully selecting and evaluating the institutions into which they place students. This appears to provide them a sense of reassurance that their students are being placed in the right organisations where growth will occur:

> '*We engage with employers by doing site visits because every time we place a student at work a coordinator and someone from central office needs to go to the employers, we first do workplace approvals before placing the students and also once the student has been placed we need to go an visit the employers to find out how is the student performing…*' (WIL Director, Female)

4.9.4. High student expectations leading to disappointment in workplace

Excited students going into the workplace often find themselves being let down by reality. Despite having little to no experience, students often go into their first job with the mind-set of expecting to receive the best income and best position from the outset. Unfortunately, they are often disappointed as their expectations are not met, despite having received advice about setting realistic expectations:

> '*Yes we do get a-a lot of that…to…from students because they...uhm, uh, at...during work integrated learning they want to earn the full salary, and uhm we, before they go out we tell them...we often tell them it's not about the money… and uh...WIL co-coordinators uh on... during their work preparedness classes always tell students that this is...this is not a full-time job, and uh you*

need to finish your work integrated learning so that you can get the diploma.'
(WIL Director)

4.9.5. Positive skills development feedback from students

Students often provide feedback on their experiences and learning while at their WIL sites, and seem to report positively about the skills that they learn. From this feedback, WIL leaders believe that students show improvement in their skills development:

'Uhm yes...they…yes they do because when they go out for work integrated learning uhm they have a log book that they must complete for that twelve months or depending on...how long is the…is the placement period…so uh, based on the feedback that we get from those log books, yes they...they…the skills are improved.' (WIL Director)

4.9.6. Employer involvement at a curriculum level to solve the demand issue

More participation from employers, particularly at the curriculum level, was suggested as a possible mechanism that could be put in place to bridge the gap between employer's expectations regarding employee skills and the task of universities to produce graduates who meet the necessary standards:

'I think uhm...it would be best if we involved companies uhm…on curriculum development because I think that would be... would be on the right track if the institution is doing...the right thing…Yea, because by involving employers on their curriculum development forums would be best…But uh we do have those...on work integrated learning, we do have advisory boards. So, we...try to-to involve the employers as much as-as we can, with regards to uhm…with regards to work integrated learning.' (WIL Deputy Director, Female)

4.9.7. Systems in place to track employment of students after work placement

The WIL Director explained that there is a need to evaluate the extent to which students are being absorbed by their work placement organisations. A survey to trace students and find out their employment status is being worked on by the WIL Office.

'…at the moment we are currently conducting a survey. Uh we never...trace any students; we didn't have that uhm...that in place. But uh we starting this year to

conduct a survey and find out how many students are employed um...permanently employed.' (WIL Director)

4.9.8. Work placement is easier for some than others

On the issue of work placement, the WIL Director noted that placing students from certain faculties is easier than in other faculties such as Applied Sciences, which often sees students waiting years just to be placed. Furthermore, the high influx of students also presents problems as there is a shortage of available companies to place students in.

> *'Uh no, I think it's easier….to place students on the business faculty. Uhm yea, because we…every year we get a high number of students being placed. Whereas on the engineering, applied sciences, we always get low numbers. We have a lot of students that are still not placed from...from 2015 yes…we still have those students that are still not placed. They are still trying to be placed. We...yea I think, yea business is the...they are placed more there. We have high numbers on the business faculty.'* (WIL Director)

4.9.9. Companies not buying into non-top university students

The issue of placement was further described by the participant, who highlighted that they have a limited list of companies that are interested in forging long-term relationships with some universities. Getting buy-in from some companies is difficult as they prefer to collaborate with institutions considered to be at the top of the academic chain. This puts many students attending non 'A-list' universities at a disadvantage as their potential is overlooked. According to the researchers own opinion, A-List universities that are the top ten universities in South Africa whose graduates are likely to be placed due to the reputation of the university and the quality of graduates the university produces.

> *'…it's difficult to get uh to involve companies, because most companies and we do not have a lot of companies in our database. Most companies want students from top universities. So it's so difficult...sometimes when they hear that the student is from {inaudible} they want students from the traditional universities. It's so difficult but we are trying.'* (WIL Director)

4.9.10. Steps to improve/develop skills

In an attempt to tackle the issue of workplace students not having the requisite skills, certain programmes have been designed and put in place to assist students prior to them entering the workforce:

> *'…from 2011 we had a-uhm EIP, employability improvement programme, pro-project. That project was initiated by the department of higher education in collaboration with JIKA. JIKA is Japanese international collaboration agency. That programme is helping the students to-to enhance their softer skills, before they enter the-the workplace. So I think we-we are improving. We're getting there.'* (WIL Director)

4.10. Conclusion

The objective of this chapter was to assess both the quantitative and qualitative data uncovered by this study. In the first half, the participants' demographic and background data were shared, as were the data relating to the WIL programme. This was followed by an explanation of the qualitative section, which consisted of an in-depth interview that was transcribed and analysed, using thematic analysis, onto Atlas.ti. The purpose of using the mixed methods approach was to examine how quantitative and qualitative questions can be compared and discussed in detail, particularly when one is examining the similarities and differences in perceptions regarding the successes of the programme. In the next chapter, a comparison between the literature reviewed and the findings will be presented.

CHAPTER 5

DISCUSSION SECTION

5.1. Introduction

The aim of this investigation was to assess whether work-integrated learning (WIL) programmes equip University of Technology students with skills for the workplace, and whether the courses that students enroll for are appropriate to the requirements of the labour market. This chapter commences with a discussion of the major findings of the study, as well as trends and relationships in the data. Furthermore, a discussion of the results in relation to the literature is provided, the implications of the results are set out, and the limitations of the study in relation to the results and the literature are expanded upon. This chapter closes with a discussion of the recommendations as well as an overall conclusion.

The research questions posed for this study were:

- To what extent does the WIL programme meets its objectives and prepare students with the practical skills that are required by employers when recruiting new graduates?

- What additional competencies and skills, over and above a formal qualification, are required by the labour market when employing graduates?

- What programmes or initiatives could the selected University of Technology introduce to address graduate attributes required by the labour market, which are not contained in the curriculum as it is currently structured?

5.2. Findings of the study

In investigating whether WIL programmes equip students with the relevant skills for the workplace, the perceptions of the sampled graduates and the response by the programme director were explored. Evidence supporting its performance varied; some of the major findings were that: between males and females, a majority of the females responded on the survey. An interesting observation of the results exposed that the majority of the graduate participants had some type of employment at the time of the study, with only a small percentage being unemployed or self-employed. The majority were working in public sector institutions and were generally retained within these institutions. Many of the participants felt that the skills that they learnt within the WIL

programme were relevant, and furthermore, they believed that the qualifications they had attained were relevant for their current roles. To add to this, the participants were generally of the view that they were prepared for the working world. This view, expressed qualitatively, correlates partially to that given in the interview, although some employers felt otherwise.

Overall, the students in the study indicated that they had rewarding experiences and have acquired enhanced knowledge and skills needed for their separate disciplines. These findings are in line with similar studies conducted by Orrell (2004), McLennan and Keating (2008), Freudenberg, Brimble and Vyvyan (2010) and Cooper, Colin and Gordon (2010) who state that students are to derive several benefits from WIL experiences, namely, development of relevant discipline specific skills, personal attributes, and communicative abilities.

Some of the graduates' perceptions of their employers were that they were not actively engaged with the processes of the programme (e.g. placement, work provision and providing feedback on the students), however there was a belief that employers are involved at some level in addressing some of the issues highlighted in regards to aligning labour demands to skills/qualifications obtained by students. Some employers are, in terms of placement, seen as being more biased towards students from non-traditional/non-recognised educational institutions. Furthermore, certain students within specific faculties are more absorbed in the WIL programme. To add to this, most graduates go into the workspace with high expectations (particularly related to their remuneration), only to be met with reality/disappointment. Finally, it has been reported that there are programmes in place that seek to address the development of essential skills, including soft skills.

The lack of reliable data on graduate trajectories and employment, as well as on partnerships between universities, colleges, SETAs and employers, is hindering planning efforts on how to improve the placement of graduates and where and how effective partnerships can be developed. The gathering and analysis of data – particularly data relating to quality – is uneven and needs to be improved. Improvements in reporting from government departments, civil society and the private sector will enable a more complete and credible HRD dataset, which can be used to

make informed decisions about future priorities and areas of intervention. This will be an important focus of the Human Resource Development Council in the next five years.

The high unemployment rate attributed to the 7,0% slump in the economy in 2020, off the back of stringent lockdown restrictions, compared with that of 2019, with GDP growing by 4.6% on a quarter-on-quarter seasonally adjusted annualised basis. However, despite that being the third consecutive quarter of positive growth, the South African economy is 2.7% smaller than it was in the first quarter of 2020, reports Stats SA.

As a result, there are more job seekers in the marketplace than ever.   According to the Career Junction Index, "areas of high supply correlate closely to areas of high demand, however supply outstrips demand in some areas, leading to a competitive environment for job seekers." With less jobs available to absorb the South African labour force, the unemployment problem is further exacerbated. Added to this, is the inability to accommodate about 190 000 new graduates per year. Based on the 2019 QLFS the formal market only absorbs an estimated 41 000 graduates each year. Although graduate unemployment is clearly less serious than unemployment in other educational categories, the labour demand for graduates is not sufficiently rapid to absorb all graduates.

The study findings also highlight the significance of implementing a WIL model successfully in order to create employment opportunities for the youth, especially women, thereby promoting the National Development Plan for the country (RSA 2011a).

5.3. Interpretation of results

Interpretation of the results in the context of the study's objectives:

i. Extent to which the WIL programme meets its objectives in preparing students with the practical skills required by employers when recruiting new graduates:

Some of the findings suggest that WIL programmes do perform their intended task of giving students the necessary skills to navigate, and participate in, the workplace. Some of the qualitative results also support this suggestion. These results endorse the findings of the literature reviewed, i.e. that work integrated learning plays a pivotal role

in preparing graduates to make significant contributions within the workplace (Coll & Chapman, 2000; Sewell, Venter & Mason, 2016).

To add to this, the quantitative results also suggest that students are studying courses that are in line with the labour market demand. However, not all of the qualitative results confirm that WIL programmes are able to prepare students for the workplace, as the employers' feedback disagrees that the programme appropriately prepares students for the work environment. Shivoro, Shalyefu and Kadhila (2018) also pointed to the fact that employers feel that graduates do not have the appropriate skills for the workplace. In addition to being able to apply the expertise learned at university, this also includes developing the right mindset for the workplace by harnessing so-called soft skills such as social interaction etiquette, communication, problem solving and interpersonal skills.

Graduates need to have both academic and practical skills if they hope to find employment and grow in their careers. While educational institutions, particularly universities, focus on theoretical knowledge, work-readiness training needs to be an integral part of an academic course so that students are exposed to both sides of the coin.

ii. Competencies and skills required by employers in recruiting new graduates:

The current job climate demands that students have a holistic set of skills - both in terms of their field of expertise, technical know-how to participate in an increasingly digitised work environment and also so called soft skills such as communication, critical thinking, problem solving, self-discipline and time management (especially in the current work from home economy).

It is essential for tertiary institutions to have direct communication and interaction with the workplace, to keep their finger on the pulse of the current needs in the working environment, so as to create an efficient ecosystem that supplies matching skills to quality jobs in order to build our economy and stimulate graduate entry into the workplace.

iii. Addressing graduate attributes for the labour market:

Graduate attributes represent a package of knowledge, skills and understanding graduates need to impress potential employers. As a new employee they need to

have the knowledge, skills and key attributes to be a success in the role they are appointed in.

This leads to three areas of focus:

1. Job related knowledge and skills: This means that if the employer needs a specific degree, then the graduate needs to have it as a minimum requirement. However, this can extend to having industry specific qualifications, expertise in using specific equipment or software.
2. Transferable employability skills : Transferable employability skills are general competencies and behaviours that will help ensure that you are work ready. They can be applied across a range of different jobs in different industries. They are usually picked up over time and with experience, and can be gained from previous positions, but also from charity and voluntary work, hobbies or just from life itself.
3. Cultural fit and attributes that align with the organisation: Employers want candidates who will fit into their organisation and work well with the rest of the team. The graduate personality matters. Their working style, their mindset and their work ethic need to match that of the organisation. To be successful, they also need to work somewhere that fits with their own beliefs, values and needs. Employees tend to stay longer, be happier and be more productive in organisations where they feel they 'fit'. It is important for each graduate to understand what they value at work, and make sure the roles and organisations they apply to work at will suit them.

The study found that the skills required for entry-level workplace practice are indeed not only learnt in the lecture room through cognitive processes, but also through exploring a combination of cultural competence, critical thinking and intellectual reflection that occur in any authentic globalised environment (Gribble et al. 2014; Gamble, Patrick and Peach 2010).

This is supported by results of the analysis as students expressed their being equipped with the relevant skills, although there is not enough data to argue what employers may have felt in that regard. The study had more female respondents than male, which relates to a study by Smith & Kruger (2008), which looked into gender influence on online survey responses and found that women are more prone to respond to online

surveys than men. However this may be circumstantial, as Bista and Saleh (2017) found that men respond more to surveys provided they are sent reminders.

Despite some negative feedback from employers on graduates' work preparedness and thus employability, it should be noted that the cause of unemployment is not solely the inability of WIL programmes to prepare students with the necessary skills. Rather, there is a limited pool of companies that are ready and willing to accommodate and employ new graduates (Reinhard, Pogrzeba, Townsend, & Pop, 2016). In addition, the results also suggest that there is resistance amongst employers when it comes to actively engaging in the WIL process. The reasons for this are difficult to confirm, however, thus an investigation into this could prove beneficial. Furthermore, a lack of engagement by employers will continue to feed the cycle of unemployment.

Unemployment rates in South Africa remain high, with a recent StatsSA report showing that the graduate unemployment rate of those between the ages of 21 and 24 was 31% in the 1st quarter of 2019, compared to 19.5% reported for the 4th quarter of 2018.

Although current statistics indicate a serious unemployment problem, the results of the study showed a different picture, in that the majority of graduates surveyed were employed at the time of the study. As mentioned, certain graduates within specific faculties were said to be more easily placed into jobs through the WIL program, which aligns with Oluwajodu, Blaauw, Greyling, Ewert and Kleynhans' (2015) finding that one of the possible causes of unemployment is the type of qualification one has obtained. Furthermore, it was mentioned by Oluwajodu et al. that graduates often enter the workplace with high expectations when it comes their salaries. This may be a possible contributor to unemployment, as employees' attitudes and perceptions towards the type of job, work environment and salary they are to receive may influence whether they accept and stay in a job (Netswera, Rankhumise & Mavundla, 2005).

5.4. Limitations of the study
Given that the sample of this study was restricted to that within the chosen technology university, these results should not be generalised to other educational institutions. Despite this, the results do give a glimpse into some of the reasons for unemployment as well as employment amongst graduates, as well as the value of the WIL programme. While the study used the mixed method approach by incorporating quantitative and qualitative methods, it is possible that saturation was not adequately reached with the

one interview, from which qualitative data were extracted and compared to the quantitative data. For this reason, a comparison between the perceptions of the graduates and WIL programme directors could not be made as reliance was limited to one interview. Furthermore, the questions asked of the alumni and the WIL Director were generally not aligned for comparison purposes, with the exception of one or two questions.

It is worth noting that a serious limitation of the study was is the absence of the voice of the employer. A sample of employer involvement in the study should have been considered. This important exercise (interview) should have been conducted with real employers or members of an Industrial Advisory Committee of a chosen academic discipline. Views expressed by the WIL Director were very general and could not bring out the needed answers.

Given that it was found that those within the business faculty are more often employed – and those graduates made up the bulk of the sample – the findings regarding the difficulties of placement, unemployment and perceptions of skills development/work preparedness were limited. Although the demographic details of the participants were available, an analysis into the influence of race, gender and background was not included in the study, thus how these may or may not have improved graduates' chances of employment was not ascertained.

5.5. Recommendations

1   This study established that there is a fundamental impediment in the execution of a skills planning mechanism rests within the competences of important role players at diverse levels of the value system. It is thus recommended that companies and skills planners ought to possess a superior comprehension of the capabilities of Public Sector Education & Training (PSET) organisations to advise and guide their core education and training activities.

Subsequently, universities, TVET colleges, and other public and private providers require a better understanding of how to proactively respond to the evolving technological capabilities and skills requirements of companies, mainly with regard to professional, occupational and skills-oriented programmes, as well as their part in producing the 'right' graduates for the workplace and the national economy.

Skills planning necessitates the rigorous understanding of the will, competencies and interactive capabilities of universities and colleges to respond to employers' needs.

2   It is recommended that in attempting to respond to the problems with skills supply and demand, as well as to prepare young people for the labour market more effectively, universities and colleges must interact more closely with companies, government agencies, professional bodies and other stakeholders. For instance, relationships with professional bodies, industry associations, firms or government agencies may lead to funding for bursaries, chairs in new fields, and more employment opportunities for graduates.

Partnerships may also assist universities and colleges to achieve their strategic goals, and to contribute to national economic and social development goals.

Colleges and universities also require expertise, structures and interface mechanisms that can facilitate linkages with businesses, government agencies and intermediary organisations, that is, to develop 'interactive capabilities'. The leadership of tertiary institutions plays a significant role in terms of the policy and direction they provide, as do academics and lecturers, who can provide innovative and well-grounded courses.

Future studies could more deeply investigate the extent to which WIL programmes provide students with the requisite skills, as well as prepare them for the working world. To do this, a questionnaire could ask for a list of skills that graduates, employers and WIL programme leaders believe are needed to make a graduate employable, and from this a comparison of these two can be made. Although the interview in this study provided good insights into the WIL programme, interviews with an employer and at least one graduate would have made for an interesting comparison between the three parties. Furthermore, it may prove beneficial for a randomised sampling method to be used in future studies to ensure that the sample is representative of a university's population.

3   To improve the effectiveness of WIL programmes, one of the recommendations posed by the WIL Director, which was also mentioned in the literature (Human Resource Development Strategy, 2016), is to encourage collaboration amongst

employers at the course content construction level. To add to this, Reinhard, Pogrzeba, Townsend and Pop's (2016) study argued for an effective cooperative education. In order to adequately prepare graduates for the work setting, a WIL programme must reflect the views and desires of students, educators and employers. This, in turn, will ensure that graduates with the appropriate skills are being trained and are ready for the working world.

Whilst there are serious problems in certain aspects of the education and training system, some of the most serious challenges exist in relation to coordination. There is a general understanding that for an individual to become employed in an occupation that has a critical skills shortage, that person must obtain both a formal education and workplace experience through on-the-job training. Although some of those engaged in occupational programmes are obtaining work experience, the challenge remains that a limited number of workplaces provide training either to the current workforce or to those seeking entry to the workplace for the first time.

The problem is not necessarily one of absence of will, lack of policy, lack of funds or lack of capacity; it is much more a problem of poor coordination and the inability of young people to navigate the complexity of finding suitable workplaces, with willing employers, experience relevant to their field of study, funding for the cost of going to work, and assistance in some of the soft skills needed to work in a modern workplace.

According to the literature, more programmes that teach the skills most desired by employers should be put in place. As extant research indicates that students who have been a part of the WIL programme are more likely to experience better employment outcomes, there is evidence for WIL programmes to continue to be implemented (Ferns, Russell, & Kay, 2016). Another recommendation is to look at how similar contexts to those of South Africa's are successful in their graduate employment rates and the design of their WIL programmes. This investigation might reveal methods, beyond collaboration, that could be implemented to improve programmes and possibly address some aspects of graduate unemployment.

5.6. Conclusion

This study was able to give insight into whether WIL programmes are able to prepare and equip graduates with the essential competencies according to labour demands. Although exploration was possible within the chosen sampling framework, and in turn

the sample, it is imperative to recognise that there were several limitations and constraints noted, for example the sample was not completely representative of the chosen university context. While evidence does exist of the benefit of WIL programmes, there still remains the issue of unemployment for some graduates.

Even before the global pandemic, young South Africans struggled to find productive employment. And now, paired with the challenges posed by Covid-19, young people need long-term support more than ever before. Jobs have been lost, lives interrupted, education disrupted. And while we are hopefully emerging from the worst of the pandemic's impact, its legacy will be with us for years to come in the form of higher youth unemployment. More therefore needs to be done to help support young people to access a job, an apprenticeship, education, or a high quality training opportunity. Extensive youth training, apprenticeship and WIL programmes should be a priority for government and tertiary institutions. As does retraining and reskilling so that many can be relocated from sectors that are shrinking. What is more, opportunities need to be unlocked in on-the-rise, growing sectors like digital, eCommerce, data, and artificial intelligence, which are not only bringing fresh opportunities, but hope for young job seekers.

There has been a call for collaboration between the three main players: graduates/students, educators and employers (government or private). This collaboration, particularly at the course construction level, will guarantee that graduates possess the appropriate skills to enable them to work effectively within their given work environments, as well as being seen as strong employees worth retaining. More research is, however, needed in this area, so that a more in-depth understanding of the significance and impact of WIL programmes, within the South African context and more broadly, can be made. By understanding the successes and failures of WIL programmes, researchers may be able shift their research focus to areas where additional barriers to employment can be explored and resolved.

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APPENDICES

Appendix A: Types of Work Integrated Learning

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° Short work exposures (anything from one day to a week) where students, usually in groups, observe work and have presentations from experts in the organisation. These exposures are typically organised by the academic institution with the cooperation of the workplace organisation.

° Workplace based experience, where students actually carry out tasks within their curricula. This could range between short (for example, one week) and longer (for example 3 months) periods. An example of this is the old "sandwich" courses that N and T courses used to require. The key feature of this is that the student is still enrolled for the qualification, that is, the workplace based experience is an integral part of the qualification. It follows therefore that the main party in organising workplace based experience should be the academic institution which needs to find workplaces for the practical component. Due to the imbalance between the number of students needing workplace based experience and the number of workplaces with suitable facilities available, simulated workplace experiences are likely to increase in number – for example, laboratories (including computer laboratories) and test workshops. These, however, are less satisfactory than a normal workplace due to the absence of workplace disciplines and tutoring/mentoring by experienced employees.

° Apprenticeships. These are regulated WIL programmes for trades specified in the National List of Artisan Trades. Apprenticeships are managed by employers.

° Learnerships. These are also regulated WIL programmes, centred around the acquisition of NQF qualifications under the SETA system. Learners are employees and therefore the learnerships are managed by employers in a tri-partite relationship between the learner employer and training provider.

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(SABPP, 2014)

Appendix B: A case study of Hendrik Janse van Rensburg

Hendrik Janse van Rensburg, proprietor of the Protea Tyres franchise based in Nelspruit, has set up a model of a workplace centre of excellence where higher education and industry players can integrate emotional intelligence training with hard skills to provide broad-based (80%) industry specific and approved training. On completion, students can undergo specialised training (20%) and mentorship with qualified and certified facilitators. They themselves will then become successful mentors, facilitators and preferably entrepreneurs.

The Centre of Excellence was set up originally through the Retail Motor Industry Association (RMI) which was prepared to be a partner in a Public Private Partnership to pilot the model. RMI therefore identified one of its member companies, Protea Tyres in Nelspruit, for the pilot site. Protea Tyres was already a SAQA accredited training facility so it had the facilities to do the workplace based training.

Learnership training can be given on NQF level 2, 3, 4 or level. The programme is also structured so that the learner can go from level 2 (basic skills i.e. tyre repair and fitment) to level 4 (sales and marketing) after which the learner can then go on to an internship to complete the program with a certificate and industry designation. On completion of the programme and a new venture creation learnership, the learner can acquire a position either in small or

Source: SABPP (2014)

Online newspaper article on www.news24.com

Appendix C: Landelahni Graduate Survey

Increasing the skills pipeline for economic growth

Findings from the Landelahni Graduate Survey 2011

THE LOW NUMBER of entry-level professionals in engineering and information technology is aggravating the shortage of critical skills needed to drive economic growth and boost employment.

It is vital to soak up unemployment, particularly among the youth, and job creation depends on a robust economy. Boosting the skills pipeline is one of the best ways to generate growth and address ballooning unemployment. Each skilled professional has the capacity to create jobs on an exponential basis.

Currently key skills are sorely lacking, with an estimated shortage of 800 000 skilled workers across senior management, the professions and technical occupations. Moreover, the Landelahni Graduate Survey 2011 shows that the number of graduates in core disciplines such as engineering and information technology (IT) is not increasing rapidly enough to meet the country's development requirements. The high fall-out rate, with only one in seven engineering and computer students completing their tertiary education, compounds the problem.

We need to build our pipeline of skills, particularly when seen in the context of a global skills shortage and Africa demand. Africa's expenditure on infrastructure projects such as electricity, water, information and telecommunications technology and transport and logistics is expected to reach more than US$1 trillion over the next ten years. As investment on the continent grows, so South Africa is at risk of losing its skilled professionals to more robust economies.

According to the Landelahni survey, enrolment in universities and universities of technology has increased some-what over the past twelve years, but graduation rates remain low.

Engineering enrolments doubled from 30 000 in 1998 to 59 454 in 2009. However, engineering graduates barely reached 8 375 in 2009, of which 4 135 received university degrees and the remainder certificates or diplomas – an average graduation rate of 14% over the period, compared to a graduation rate which has now reached 38% in most developed countries.

It is good to see that more women are entering the engineering professions, with female engineering graduates up more than sixfold from 330 in 1998 to 2 112 in 2009. Black graduates have increased fourfold to 6 204 over the same period.

In the case of IT professionals, enrolments in computer science and data processing in universities and universities of technology have more than trebled from 9 015 in 1998 to 33 600 in 2009. However, the graduation rate dropped from 23,1% to 13,4%, with only 4 509 computer professionals graduating in 2009, of which 1 752 received university degrees and the remainder certificates or diplomas.

Taken overall, these figures represent marginal growth. They do not in any way reflect the momentum of the IT sector locally or globally. IT skills, in particular, are crucial since IT is a cross-cutting technology that underpins all areas of business.

Graduates in engineering and IT are not growing fast enough to drive economic growth and generate employment. We should be turning out many more new graduates in these disciplines each year.

Research commissioned by government shows that scores of young people who make it to university drop out due to lack of funding. We should be putting massive resources into throughput so that we guard against the high fall-out rate.

As a short-term measure, South Africa plans to import 50 000 skilled workers. But where are we going to find them and how can we make our country attractive to them, let alone afford to pay them in dollars? Skills development in South Africa tends to be demand-driven and tactical. However, the skills shortage cannot be solved in the short term. It requires coordinated long-term strategies from the private sector and the state to ensure adequate funding.

The National Treasury has acknowledged that, for jobs to be created, the skills required to fill them are also needed. "A better educated and more highly skilled workforce is the most pressing long-term priority for the economy," it states in a recent discussion paper.

Too often, schools and universities are not turning out the skills required by business. There is a critical need for research and accurate information to ensure that we have enough of the right kinds of skills. When it comes to increasing scarce skills, the only real long-term solution is to increase the pipeline of entry-level skills into critical areas.

Sandra Burmeister
CEO: Landelahni Recruitment Group

▶ CONTACT

Lisa van Hoogstraten
083 448 6008
lisa@bespokecomms.co.za

(Burmeister, 2011)

Appendix D: Information Sheet and Consent Form

Work-Integrated Learning and Graduate Employment Study

Who am I

Hello, I am Bongiwe Moni. I am an MTech student at the Cape Peninsula University of Technology.

What am I doing

I am conducting research on the work-integrated learning to assess whether it adequately prepares students for the world of work and its impact on the employment prospects of graduates.

Your participation

I am asking you whether you will allow me to conduct one interview with you about your knowledge and opinions of work integrated learning and how it has assisted students with skills that will better equip them for employment.

Please understand that **your participation is voluntary** and you are not being forced to take part in this study. The choice of whether to participate or not, is yours alone. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate, you may stop participating in the research at any time and tell me that you don't want to go continue. If you do this, there will be no penalties and you will not be prejudiced in any way.

Confidentiality

All identifying information will be kept in a locked file cabinet (and will not be available to others and will be kept confidential to the extent possible by law. The records from your participation may be reviewed by me for making sure that research is done properly. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

I am asking you to give me permission to tape-record the interview so that I can accurately record what is said. Your answers will be stored electronically in a secure environment and used for research or academic purposes now or at a later date in ways that will not reveal who you are.

I will not record your name anywhere and no one will be able to connect you to the answers you give Your answers will be linked to a fictitious code number or a pseudonym (another name) and we will refer to you in this way in the data, any publication, report or other research output

Risks/discomforts

At the present time, we do not see any risk of harm from your participation. The risks associated with participation in this study are no greater than those encountered in daily life.

Benefits

There are no immediate benefits to you from participating in this study. However, this study will be extremely helpful to us in that we hope will promote understanding of WIL and how it can be better adapted to suit the needs of the employers and improve the skills of students.

If you would like to receive feedback on our study, we will record your phone number on a separate sheet of paper and can send you the results of the study when it is completed sometime after six months.

If you have concerns or questions about the research you may call me at 021 466 7894 or email me at Bongiwe.moni@gmail.com.

CONSENT

I hereby agree to participate in research on Work-Integrated Learning and Graduate Employment. I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop participating at any point should I not want to continue and that this decision will not in any way affect me negatively. I understand that this is a research project whose purpose is not necessarily to benefit me personally in the immediate or short-term. I understand that my participation will remain confidential.

…………………………..

Signature of participant   **Date**:…………………..

CONSENT FOR TAPE RECORDING

I hereby agree to the tape-recording of my participation in the study.

…………………………..

Signature of participant   **Date**:…………………..

I understand that the information that I provide will be stored electronically and will be used for research purposes now or at a later stage.

…………………………..

Signature of participant   **Date**:…………………..

Appendix E: Work-Integrated Learning and Graduate Employment

INTERVIEW QUESTIONS FOR THE COMMUNITY ENGAGEMENT AND WORK-INTEGRATED LEARNING OFFICE AT THE SELECTED UNIVERSITY OF TECHNOLOGY

1. **What is the role of the WIL office in relation to the placement of students?**
2. **What is the general feedback that you receive from potential employers about the work readiness of the students?**
3. **How do you engage with employers? Do you have graduate recruitment partnerships in place? Do you invite employers to open days?**
4. **What expectations do students go with to potential employers? And how often are these expectations met?**
5. **Do students come back with improved skills relevant to the work environment?**
6. **How can the curriculum be structured to meet industry demands?**
7. **How often are students permanently employed after the WIL placement programme?**
8. **Is there a difference between student uptake into the workplace for students based on faculties and industry skills needs?**
9. **How effective is the WIL programme in complementing students' theoretical knowledge and practical work skills?**
10. **What can be done to improve the WIL programme?**

Appendix F: Work Integrated Learning and Graduate Employment Questionnaire

INTRODUCTION

I am conducting research on Work-Integrated Learning (WIL) and Graduate Employment. The purpose of the study is to assess the extent to which the WIL programme (also known as in-service training) equips graduates with skills that prepare them for the world of work. This research is conducted as part of the requirements for completion of my MTech: Business Administration degree at the Cape Peninsula University of Technology. The purpose of this list of questions is to obtain your view on a number of factors pertaining to WIL and graduate employability. Participants to this survey are alumni from the selected University of Technology – some of whom are employed and some who are not – but who underwent the WIL programme as part of acquiring their qualifications.

You have received two documents, one a consent form as well as the questionnaire which you will use to answer the questions. The first document is a list of questions with possible answers.

Remember to use the pencil that has been provided to you to fill in your answers. **Colour in the circle completely** and please stay within the lines. **You will have to choose only one answer for every question.**

Please raise your hand if you are uncertain or need some help.

Remember that:

- this is not a test

- there is no right or wrong answer

- your answers will only be seen by the researcher

- your name will not be written down anywhere

You may keep the questionnaire and the pencil.

Remember to answer all the questions.

Thank you very much for participating in this survey.

1. **Are you a male or a female?**

> a. Male
>
> b. Female

2. **What is your race group?**

> a. Black
>
> b. Coloured
>
> c. Indian
>
> d. White
>
> e. Other

3. **Which course did you first enrol for?**

_____

4. **Were you a part-time or full-time student?**

> a. Full-time
>
> b. Part-time

5. **How long did it take you to complete your studies?**

> a. 3 years
>
> b. 4 years
>
> c. 5 years
>
> d. More than 5 years

6. **What year did you graduate?**

_____

7. **From which Faculty did you graduate?**

_____

8. What is your understanding of Work-Integrated Learning?

_____

9. Was WIL a pre-requisite for you to graduate?

> a. Yes
> b. No
> c. Not sure

10. Did the university coordinate your placement at your host institution?

> a. Yes
> b. No

11. Were you placed in a public or private sector institution, an NGO or other?

> a. Public Sector
> b. Private Sector
> c. NGO
> d. Other

12. How long were you placed at your host institution?

> a. 3 months
> b. 6 months
> c. 12 months
> d. More than 12 months

13. Did your host institution offer you full-time employment after you completed your in-service training?

> a. Yes
> b. No

14. What practical skills did you learn from the WIL Programme? Please specify in the space provided below.

_____

15. How relevant are the skills learnt from the WIL programme for career advancement?

                a. Not relevant

                b. Somewhat relevant

                c. Very relevant

                d. Essential

16. **What is your current employment status?**

      a. Employed

      b. Unemployed

      c. Self-employed

17. **Is your current employment aligned to your qualifications?**

      a. Yes

      b. No

      c. Not sure

18. **Has WIL assisted you with your ability to fulfil your current role?**

      a. Yes

      b. No

      c. Not sure

19. **Do you think you were adequately prepared for the world of work?**

      a. Yes

      b. No

      c. Maybe

20. **How long did it take you to get a job after graduation?**

      a. 3 months

      b. 6 months

      c. 12 months

      d. 18 months

      e. Still unemployed

21. Are you satisfied with your current job?

        a. Yes

        b. No

        c. Sometimes

**That was the last question!!! Thank you for filling in the questionnaire.
I humbly ask that you please return the completed questionnaire to
bongiwe.moni@gmail.com**