

**Individual Factors Affecting the Employability of Information  
Systems Graduates in Cape Town, South Africa: Employed  
Graduates and Employer Perspectives**

**Master's Dissertation presented to the  
Department of Information Systems**

**University of Cape Town (UCT)**



By

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## **DEDICATIONS**

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## **ABSTRACT**

Graduate employability has been a common subject among researchers, governments and higher education systems around the world. However, while there is a lot of information and numerous models that inform on graduate employability, there has been limited empirical research in this area. Furthermore, most employability studies have been conducted in the United Kingdom and other parts of the world, which may not be representative of the South African environment. Despite Information Technology (IT) being one of the most sought after qualification by employers in South Africa, it still remains unclear as to why many IT graduates struggle to secure jobs after graduation. This study provides insight into the concept of employability in South Africa, with a particular focus on Information Systems (IS) graduates in Cape Town. The study addresses three research questions: What individual factors affect the employability of IS graduates in Cape Town, South Africa? Who is responsible for graduate employability in South Africa? How can employability be embedded into South African curriculums?

The study was guided by Dacre Pool and Sewell's (2007) CareerEDGE model, and Yorke and Knight's (2006) definition of employability. Data was collected from 19 individuals using focus group and in-depth interviews. Results showed that career development learning, experience (work and life), degree subject knowledge, skills and understanding, generic skills, emotional intelligence, self-confidence and reflection and evaluation affected one's employability. Employers, graduates and academic institutions were each expected to play a role in graduate employability. To embed employability into curriculums, universities need to ensure that curriculums are aligned to industry needs, that there is a balance between the soft and hard skills taught and that effective methods of teaching are being used. Universities are also encouraged to incorporate experiential learning in their programs and to provide proper career guidance counselling services to students early in their degree studies, so that students can make informed decisions regarding career paths and goals, and start tailoring their skills accordingly.

The research contributes to the existing literature and debate on graduate employability, and builds upon the employability factors and relationships defined by Dacre Pool and Sewell's

(2007) CareerEDGE model. The research also contributes to the existing theories on employability by providing empirical evidence regarding individual graduate employability factors. Lastly the research provides recommendations for practice and for improving employability in graduates.

**KEYWORDS:** Graduate Employability, Employability, CareerEDGE, Individual Employability Factors, Information Systems, Graduates, Employers, Graduate Perspectives, Employer Perspectives, Employment, Cape Town, South Africa

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# **1 INTRODUCTION**

## **1.1 Research Purpose**

The purpose of this study is to identify, explore and analyse individual factors affecting the employability of Information Systems (IS) graduates in Cape Town, South Africa. Individual factors refer to components of employability that are within the immediate control of an individual, and include an individual's employability skills and attributes (McQuaid & Lindsay, 2005). These employability components are referred to as individual factors for the rest of this report. The study aims to provide understanding and insight into the concept of employability from a South African perspective, and to provide recommendations for practice.

## **1.2 Research Problem**

Graduate employability is an important subject for many governments around the world (Tymon, 2013). Thus there is an increasing expectation for higher education (HE) systems to incorporate employability into their curriculums (Tomlinson, 2012; Tymon, 2013; Yorke, 2006). Furthermore, the major reasons why governments make large financial investments in HE, is the contribution that HE makes towards the development of a country's human capital (Holmes, 2013; Yorke, 2006), and the expectation that graduate employment-oriented outcomes can contribute to a country's economic growth (Holmes, 2013; Tomlinson, 2012). Thus the more employable graduates are, the greater the economic yield from these financial investments (Watts, 2006).

For many students, a degree is seen as a means of securing employment (Jackson, 2013b). Likewise in South Africa, it was found that students enrolled for tertiary education in order to improve their job prospects and likelihood of career success (Archer & Chetty, 2013). Such motivations are likely to be reinforced where tuition fees are payable (Watts, 2006). However, although investments in education may yield favourable results for some graduates, it is not the case for all graduates (Tomlinson, 2012). The reality is that a degree alone no

longer secures employment (McQuaid & Lindsay, 2005; Tomlinson, 2012; Tymon, 2013), and many students struggle to find jobs after graduation (Altman, Mokomane, & Wright, 2014; Holmes, 2013).

Although there are a lot of students that graduate within the Information Technology field, only few are considered employable (Bringula et al., 2016). While educators within the Information Systems, Computer Science and Information Technology disciplines are doing their best to prepare students for work, there are still a lot of areas where students lack the knowledge and skills that employers need (Calitz, Cullen, & Greyling, 2015; Hamilton, Carbone, Gonsalvez, & Jollands, 2015; Radermacher & Walia, 2013; Simon & Jackson, 2013; Stowell & Probert, 2013). Graduating students lack technical abilities, personal skills and professional qualities (Calitz, Cullen, & Greyling, 2015; Radermacher & Walia, 2013). According to Radermacher and Walia (2013), the gaps between graduate abilities and employer expectations can prevent graduates from succeeding in their careers.

Graduates in knowledge-based economies are further faced with decreasing employment opportunities, rapidly changing technology and an increasing obligation for continuous up skilling and employability (Coetzee & Schreuder, 2011; Potgieter & Coetzee, 2013; Tomlinson, 2012). Moreover, employers systematically and explicitly discriminate, selecting only graduates with specific educational characteristics (Holmes, 2013; McCowan, 2014; Thomas & Jones, 2007). Graduates therefore have to compete with other graduates, as well as experienced people for jobs (Archer & Chetty, 2013). Thus, even if a graduate has good information and job search skills, if they do not have the necessary skills for the job, they are not likely to keep that job long, even if they are lucky enough to secure one (Beizsley & Neary, 2012).

### **1.3 Research Context: South Africa**

#### **1.3.1 *An Overview of South Africa***

South Africa is a diverse country with an estimated population of about 54.96 million (Statistics South Africa, 2015a; The World Bank, 2014) comprising of 80.5% Black Africans,

8.8% Coloureds, 2.5% Indian/Asians and 8.3% Whites (Statistics South Africa, 2015a). Despite being an upper middle-income economy with a gross domestic product (GDP) of US 349.8 billion dollars (The World Bank, 2014), South Africa has high levels of inequality, unemployment and exclusion.

South Africa is still struggling to overcome the effects of the apartheid system that was in operation until 1994 (African National Congress, 2012). Thus there are still huge gaps between the rich and the poor, with the bulk of the country's wealth being controlled by a relatively small number of people (African National Congress, 2012). South Africa also faces inequalities in terms of education, employment, and the distribution of wealth (African National Congress, 2012). A Gini index measuring 63.4 in 2011, made South Africa the most unequal country in the world (The World Bank, 2014). "The Gini index measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution...Thus a Gini index of 0 represents perfect equality while an index of 100 implies perfect inequality" (The World Bank, 2014, para. 1). At 25.0%, South Africa's unemployment rates is one of the highest in the world (Statistics South Africa, 2015b). Moreover, 7% of the unemployed in South Africa have some form of tertiary education (Statistics South Africa, 2015b). In 2010, 53.8% of the population in South Africa were living below the national poverty lines, and in 2011, 16.6% were living on less than \$1.90 a day.

### **1.3.2 *Information Technology in South Africa***

The Information Technology (IT) industry in South Africa is one of the largest and most advanced in Africa. The ICT market was estimated at US\$ 42.6bn in 2013 by the South African Electrotechnical Export Council (SAEEC), with IT contributing US\$ 15.08bn and Communications contributing US\$ 27.18bn (Information Technology, 2013), together contributing approximately 12.2% to South Africa's GDP.

In 2012, the South African Department of Labour reported IT as a profession with a high number of vacancies in the country (Department of Higher Education and Training, 2014). In 2014, the IT profession appeared in South Africa's national scarce skills list indicating the need for more graduates with skills in this area (Department of Higher Education and

Training, 2014). As of 24 November 2015, a search on CareerJunction, one of the best known recruitment websites in South Africa, yielded 2368 results for jobs within the IT field, making IT the most sought after qualification by employers, followed by the financial sector with a total of 1839 job openings. According to Breytenbach and De Villiers (2012), there is an agreed upon shortage of graduate level business analysts and software developers in South Africa. Moreover, graduates that are able to combine scarce programming skills such as Java, C# and C#.Net skills with SQL skills are hard to find (Breytenbach & De Villiers, 2012).

### **1.3.3 Higher Education in South Africa**

South Africa has some of the best universities in Africa and the world. Three South African universities appeared in the top 20 of the BRICS and Emerging Economies Rankings 2015 (Times Higher Education, 2015a); and one ranked 120 out of 801 best global universities listed by the Times Higher Education World University Rankings 2015-2016 (Times Higher Education, 2015b). The BRICS and Emerging Economies Rankings include institutions from the BRICS nations of Brazil, Russia, India, China and South Africa, as well as from other countries that have been classified as emerging economies (Times Higher Education, 2015a).

Although South Africa has some of the best universities in Africa, the quality of its education and training system is low (Schwab, 2012; Spaul, 2013). The quality of the education system of South Africa ranked 140 out of 144 countries surveyed by the 2012 Global Competitiveness Report (Schwab, 2012). Out of every 100 pupils that start school in South Africa, only 50 make it to grade 12, 40 of them pass, and only 12 qualify for university (Spaul, 2013). South Africa also struggles with low university completion rates with about 40% of students dropping out within their first year of study and only 15% completing on time (McCowan, 2014). Moreover, an analysis of educational achievement shows that there are two different public school systems in effect in South Africa: a smaller, better performing system that caters for the wealthiest 15-20% of pupils; and a larger, less performing system that caters for the poorest 75-80% of pupils (Spaul, 2013).

HE programs in South Africa are developed in conjunction with professional bodies as well as using guidelines from the National Qualifications Framework (NQF). The goal of the NQF is to improve the contribution that HE makes to students employability (Maharaso & Hay,

2001). Sector Education and Training Authorities are responsible for establishing rules of the NQF and ensuring programmes are aligned to the requirements of work (Maharasoia & Hay, 2001).

## **1.4 Gaps in Literature**

According to Schreuder and Coetzee (2012), more South African research is needed in areas such as graduate employability and coping with employment instability; predictors for career success; career development and counselling models. Carbone and Hamilton (2016) suggest the need for further research to determine how and where to develop employability skills within university curriculums, which stakeholders (academia, industry or career advisers) are most suitable for teaching employability skills and in what context.

Dacre Pool and Qualter (2013) explain that there have been numerous models that inform on graduate employability, but very limited empirical research. Similarly Wickramasinghe and Perera (2010) state that “although a considerable amount of the literature addresses employability skills, much of the information is theoretical in nature and offers policy recommendations and prescriptive advice” (p. 227). Moreover, most employability studies are survey based, with respondents being given a list of skills and attributes to rate (Holmes, 2013). Lastly, most employability studies have been conducted in the United Kingdom (UK) and other parts of the world (Abdullah et al., 2012; Lowden, Hall, Elliot, & Lewin, 2011; Singh & Singh, 2008), which may not be representative of the South African environment.

Marock (2008) explains that while there is a lot of information surrounding employability, there has been limited research based data on how to strategically engage in pragmatic, efficient and tangible actions to increase youth employability in South Africa. Although Archer and Chetty (2013) conducted a study in South Africa that looked at the employability of graduates; their study focused on graduates from the University of South Africa (UNISA). UNISA represents a unique case as it is an open distance learning institution that offers programs for a predominately older, non-traditional, part-time student population (Archer & Chetty, 2013). Moreover, most of the students are already employed prior to enrollment and graduation. Similarly, Bezuidenhout (2011) conducted a study in South Africa aimed at developing a measure of graduate employability. Bezuidenhout's (2011) study focused on a

target sample of students from the College of Economic and Management Sciences (CEMS), a subsection of UNISA. Therefore Archer and Chetty (2013) and Bezuidenhout (2011) studies may not be applicable to more traditional South African universities, particularly where distance learning is not employed. Moreover, Archer and Chetty's (2013) and Bezuidenhout's (2011) studies were quantitative in nature and used the survey method for data collection.

The study attempts to address some of these gaps by exploring and analysing the individual factors that affect the employability of IS graduates employability in South Africa, with a particular focus on Cape Town. The study focuses on a broader target sample comprising of IS graduates from three traditional universities in South Africa. The research is qualitative in nature and used focus group interviews for data collection; an approach which differs from those previously specified. Furthermore, the research draws on the employment experiences of graduates in their early career years in order to provide empirical evidence regarding individual graduate employability factors.

## **1.5 Research Questions**

The study is driven by research question RQ1 which aims to identify rather than provide statistics on individual factors that affect the employability of IS graduates in Cape Town, South Africa.

**RQ1.** What individual factors affect the employability of IS graduates in Cape Town, South Africa?

The additional two research questions were explored:

**RQ2.** Who is responsible for graduate employability in South Africa?

**RQ3.** How can employability be embedded into South African curriculums?

The study adopted Yorke and Knight's (2006) definition of employability which describes employability as “a set of achievements – skills, understandings and personal attributes – that

make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy” (p. 3). The scope of the study was limited to graduate and employer perspectives only. Thus, the objectives of the study were:

- OB1.** To interview IS graduates and employers of IS graduates in Cape Town, South Africa.
- OB2.** To identify individual factors that make IS graduates in Cape Town, South Africa more likely to gain employment.
- OB3.** To identify individual factors that make IS graduates in Cape Town, South Africa more likely to be successful in their chosen occupations.
- OB4.** To identify relevant bodies responsible for graduate employability in South Africa.
- OB5.** To identify ways in which employability can be embedded into South African curriculums.

The study assumes that being successful in an occupation inevitably benefits one or all the following: the individual, the workforce, the community and the economy. Thus questions of benefit, beyond an individual’s achievements, skills, understanding, personal attributes, employment outcomes, career progression and success were not investigated.

## **1.6 Research Method**

The research is interpretive in nature as it focuses on bringing insight and understanding, rather than statistics into the individual factors that affect the employability of IS graduates in Cape Town, South Africa (Myers, 1997; Noor, 2008). The research was deductive as the framework used to analyse data had been chosen in advance (Burnard, Gill, Stewart, Treasure, & Chadwick, 2008). The research began with a review of the literature leading up to the research questions and conceptual model. The conceptual model was empirically tested through the collection and analysis of data. The qualitative method of data collection and analysis was used. Data was collected using focus groups and in-depth interviews and analysed using thematic analysis.

## **1.7 Research Scope**

Employability is a broad, multi-dimensional, complex topic with numerous conceptualisations and definitions (Mcgrath, 2009; Tymon, 2013). Broad frameworks of employability such as McQuaid and Lindsay's (2005) employability framework, provide holistic views of employability that include individual factors, personal circumstances and external factors. While it is acknowledged that studying employability from a holistic perspective is beneficial, it is difficult to cover every aspect of employability given its complexity and the time constraints of this thesis. Furthermore, identifying labour markets and the needs of an economy are highly complex processes (Griesel & Parker, 2009). As a result, personal circumstances and external factors are beyond the scope of this study. Consequently, broad frameworks of employability are out of scope for this study.

The study is therefore guided by Dacre Pool and Sewell's (2007) CareerEDGE model (*Figure 2* on page 16). CareerEDGE is made up of career development learning; experience - work and life; degree subject knowledge, skills and understanding; generic skills; emotional intelligence; reflection and evaluation; self-efficacy, self-confidence and self-esteem. Although the main focus of the study is on individual employability factors, in order to avoid putting blame on the jobless individuals predicament and inadequacies (Jackson, 2013b; McQuaid & Lindsay, 2005), the study acknowledges that employability is much more multifaceted. Furthermore, besides individual employability attributes, one's overall entry into employment is affected by many other factors such as job availability, social networks and possible discrimination (McCowan, 2014).

## **1.8 Structure of Document**

In the preceding sections the research purpose, research problem, research context, gaps in literature, research questions, research method and the research scope were covered. The remainder of the document is structured as follows: Chapter 2, Literature Review, presents the theoretical foundations of the research and a review of the existing literature on graduate employability. Chapter 3, Research Design, covers the research design process including the different choice of methodologies and their corresponding justifications. Chapter 4, Research

Analysis, Findings and Discussion, presents and discusses the research findings. The research ends with Chapter 5, Conclusion, which summarises and concludes the research work.

## **2 LITERATURE REVIEW**

Although there are a lot of students that graduate within the Information Technology field, only few are considered employable (Bringula et al., 2016). This study aims to identify, explore and analyse individual factors affecting the employability of Information Systems (IS) graduates in Cape Town, South Africa.

The research follows guidelines from Biggam (2008). According to Biggam (2008), a dissertation life cycle (DLC) consists of 7 stages that include producing a research proposal, writing a literature review, designing appropriate research methods, implementing the empirical research, analysing findings, concluding the research and submitting the completed work. The DLC is an iterative process with previous stages being revisited and improved (Biggam, 2008). This section covers stage 2 of the DLC process and provides a comprehensive study of the literature on employability. A review of the literature is done to provide a broader understanding of the concept under study; to provide insight into the works of other researchers; and to provide the fundamental building blocks of this research. Different sources of knowledge including books, databases, journals, periodicals, international papers, government publications, published statistics from research firms and other sources mostly limited to the period between 2010 and 2015 were used to acquire background information and data on employability. Some of the keywords used in the literature search included ‘employability’, ‘graduate employability’, ‘employability skill’, ‘employability factors’, ‘generic skills’ and ‘graduate employability in South Africa’.

The literature review process was guided by Webster and Watson (2002) and included defining key terms, identifying relevant literature, structuring and presenting the review, use of past and present tense, and the development of a conceptual framework. The review starts with an introduction to human capital theory and signalling theory, which are two of the theories underpinning this research. This is followed by a description of the IS discipline and

IS graduate. The subsequent sections focus on employability, covering definitions of employability, models of employability, individual graduate employability factors, graduate employability responsibility and embedding employability into the curriculum. The chapter concludes with a summary highlighting the main points and the development of a conceptual model to guide the research.

## **2.1 Theoretical Background**

Human capital theory and signalling theory are often applied in studies focusing on the relationship between educational attainment and labour market outcomes (Cai, 2012). Likewise, the principles underpinning these two theories form the basis of this research.

### **2.1.1 *Human Capital Theory***

According to Rauch and Rijdsdijk (2013), human capital “consists of the skills and knowledge that individuals acquire through their investments in schooling, on-the-job training, and other types of experiences” (p. 925). Employability skills such as teamwork, communication skills and other inter-personal skills are part of human capital and have increasingly become valued by employers (Taylor, Haux, & Pudney, 2012). Generally, human capital theory shows that education and skills lead to stable employment, more productivity, higher earnings, as well as reducing the overall risk of poverty and unemployment (Cai, 2012; Taylor et al., 2012). Therefore, increasing people’s skills “raises their attractiveness to potential employers and their likelihood of employment and earnings” (Taylor et al., 2012, p. 5).

There are two forms of human capital identified in literature: general and specific human capital. General human capital refers to generic skills such as problem solving, motivation, knowledge and self-confidence (Rauch & Rijdsdijk, 2013). Specific human capital refers to skills that are occupation relevant and are often a result of education and work experience in that particular field (Popovic, 2012; Rauch & Rijdsdijk, 2013). For example, an individual trying to start up an auto shop is more likely to succeed if they have qualifications and work experience in the auto mechanic field, as opposed to having qualifications in music (Popovic, 2012). Although human capital theory has been used in a number of empirical studies (Booth

& Katic, 2011; Popovic, 2012; Rauch & Rijdsdijk, 2013), it has been criticised for its assumptions that education contributes to worker productivity (Cai, 2012).

### **2.1.2 Signalling Theory**

According to signalling theory, education and skill attainment are screening devices which employers use to identify good, capable and highly motivated workers (Cai, 2012; Taylor et al., 2012). Similarly, job seekers use their education and skill levels to signal their ability, competence and motivation to potential employers (Cai, 2012; Taylor et al., 2012). Therefore, like human capital theory, signaling theory assumes that those with higher educational attainment have higher productivity, attract more employment opportunities and have higher earnings than those with basic or no qualifications (Taylor et al., 2012; Tomlinson, 2012). However, signalling theory differs from human capital theory in its belief that it is the inherent ability signalled by education to employers, and not the education itself that increases productivity (Cai, 2012).

The validity of both signalling and human capital theory has been argued as dependent on an employer's belief systems; with employers being defined as "those responsible for recruitment in employing organisations effectively acting as gatekeeper to the labour market" (Cai, 2012, p. 462). According to Cai (2012), an employer's initial belief system is often based on initial signals conveyed by educational credentials which in effect end up influencing recruitment decisions. However, an employer's initial beliefs are confirmed, corrected or adjusted through a trial and error process that is dependent on a number of factors including the employee's performance at work (Cai, 2012).

## **2.2 The Information Systems Discipline**

The IS discipline, initially referred to as Management IS, originated in the 1960's with a main focus on the application of computers within organisations (Hirschheim & Klein, 2012). The IS 2010 Curriculum guidelines published by the Association for Computing Machinery (ACM) and the Association for Information Systems (AIS) describe IS professionals as:

*“Professionals in the [Information Systems] discipline are primarily concerned with the information that computer systems can provide to aid an enterprise in defining and achieving its goals, and the processes that an enterprise can implement or improve using information technology.”* (Topi et al., 2010, p. 14).

According to Coady and Berg (2014), a good and respectable IS degree is dependent on the design and delivery of an exceptional curriculum and courses. However, the content and structure of IS programmes has been an issue of debate among academics (Coady & Berg, 2014). Respected IS programs generally align their curriculums with the ACM and AIS IS 2010 curriculum guidelines (Pratt, Keys, & Wirkus, 2014; Topi et al., 2010). The IS 2010 curriculum specifies three main knowledge and skill categories under which high-level IS capabilities fall. These include IS specific knowledge and skills, foundational knowledge and skills, and domain fundamentals (Topi et al., 2010). According to the curriculum, an IS graduate should “understand and apply data management technologies, have excellent interpersonal, analytical, and problem solving skills as well as have a strong command of the organisational domain for which the information requirements are specified” (Topi et al., 2010, p. 19).

Calitz et al. (2015) study highlighted four important categories of skills for ICT graduates. These include software development skills such as SQL, C#, .Net, web based scripting languages; business skills such as understanding and modelling business processes, strategy, project management; technical skills such as ERP, business applications, information management; soft skills such as attention to detail, work ethic, working under pressure, problem solving and communication (Calitz et al., 2015). According to Calitz et al. (2015), ICT graduates need to have skills sets across these four categories. Similarly Stowell and Probert (2013), suggest that unlike Computer Science which requires more technical skills, the IT and IS fields require good communication, personal, analytical, problem solving and people skills, as well as knowledge of management and business.

Although there have been extensive developments within the IS discipline, IS continues to struggle in terms of establishing a strong position in practice and academia, with questions surrounding its identity and legitimacy (Hirschheim & Klein, 2012). Furthermore, the IS field of study is represented by an assortment of names including Management IS, IS, Computer IS

and many others (Topi et al., 2010). The confusion between IS titles and their meaning exists both in HE and Industry, and may impact on programmes, potential recruitment and job opportunities (Stowell & Probert, 2013). Due to the ubiquitous nature of IS, IS professionals are found in a variety of employment sectors including business, healthcare, government, industry, non-profit organisations and education (Pratt et al., 2014; Topi et al., 2010). However, the primary supporters of the IS discipline are the business community and public sectors that mainly hire IS graduates (Hirschheim & Klein, 2012).

### **2.3 Defining Employability**

The concept of employability originated in Great Britain around 1909 with an initial focus on underemployment (Mcgrath, 2009). It evolved with time through a series of seven stages illustrated by Gazier (1998). At present, employability is globally defined as the ability to find initial employment, sustain that employment and find new employment if needed (Hillage & Pollard, 1998; Maltby, 2011).

Building upon the work of Hillage and Pollard (1998), Yorke and Knight (2006) defined employability as “a set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy” (p. 3). Yorke and Knight's (2006) definition of employability is widely accepted among researchers (Dacre Pool & Qualter, 2013), and is holistic as it covers skills, achievements, personal success and portrays employability as a continuous process of improvement. Furthermore, Yorke and Knight's (2006) definition aligns with the purpose of this research; that is to identify, explore and analyse individual factors affecting the employability of IS graduates. Thus the study adopts Yorke and Knight (2006) definition of employability. Although other definitions of employability are not excluded, they are not the main focus of this paper.

## **2.4 Employability Models**

Graduate employability has been widely debated in literature and modelled (Jackson, 2013a, 2014b). The subsequent sections discuss two prominent models of graduate employability which focus on individual graduate employability factors and hence form the basis of the study.

### **2.4.1 *Understanding, Skills, Efficacy beliefs and Metacognition (USEM) Model***

The USEM model by Yorke and Knight (2006) is a well-known and widely accepted model of employability (Dacre Pool & Sewell, 2007; Watts, 2006). Initial models of employability were criticised for separating skills development from the disciplinary knowledge context (Turner, 2014). Yorke and Knight's (2006) model addressed these limitations by placing the development of generic skills within the disciplinary knowledge context (Turner, 2014). Yorke and Knight's model viewed employability as being influenced by four inter-related components: U-Understanding, S-Skills, E-Efficacy beliefs and M-Metacognition. Understanding is described as deeper and broader than knowledge; skills go beyond the concept of traditional key skills and involve an awareness and responsiveness to context; efficacy beliefs relate to students perception of self and personal qualities; metacognition refers to the capacity for self-regulation and reflection on learning (Yorke & Knight, 2006). The model is shown in *Figure 1*.

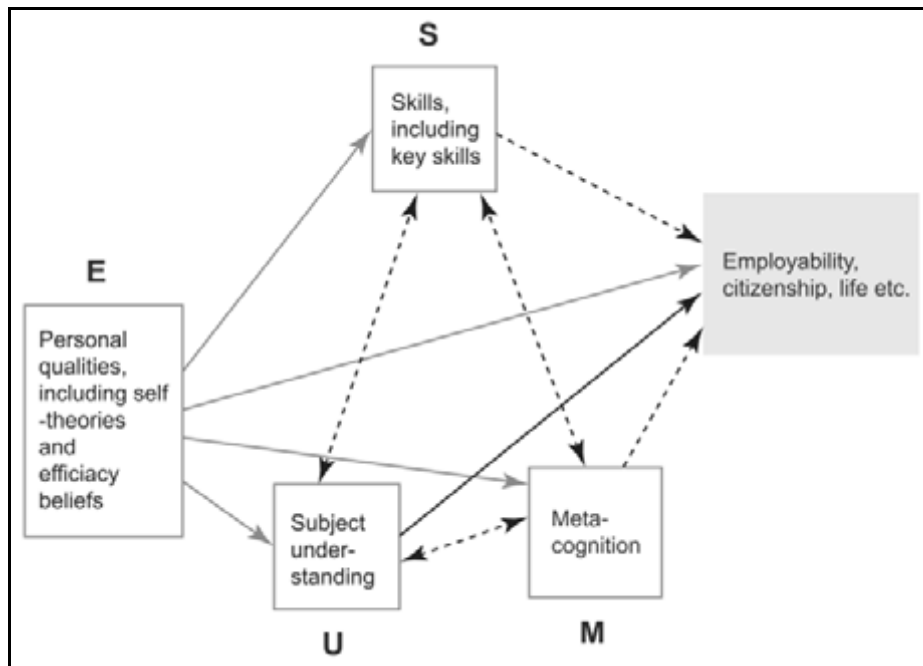


Figure 1: The USEM Model of Employability (Yorke & Knight, 2006, p. 5)

The uniqueness of the model lies in its belief in malleable self-theories as opposed to fixed self-theories (Yorke & Knight, 2006). Individuals with malleable self-beliefs believe that attributes such as intelligence are not fixed and can be developed (Yorke & Knight, 2006), thus they learn from their mistakes and apply what they have learned to future tasks (Turner, 2014). As a result they are more confident in their ability to be effective when faced with novel challenges (Louis, 2011; Turner, 2014; Yorke & Knight, 2006).

The USEM model has been used in a number of employability studies (Archer & Chetty, 2013; Napiah, Zulkifly, Jamaluddin, & Hanafiah, 2012; Shawcross & Ridgman, 2013). However, the USEM model has not been extensively used in practice due to its assessment criteria; broad and complex concepts such as employability resist summative assessments (Shawcross & Ridgman, 2013). Although the USEM model is part of a large body of scholarly work on employability, it does not explain to amateurs in the field such as students and parents, what is meant by employability (Dacre Pool & Sewell, 2007). Furthermore, Yorke and Knight's (2006) definition of employability seems to assume that graduates will remain in a single occupation throughout their lifetimes and therefore overlooks competencies needed to manage progression within and across different occupations (Watts, 2006). Lastly, the USEM model addresses employability from an academic research-driven

perspective, and not from the perceived needs of employers and government (Shawcross & Ridgman, 2013).

### 2.4.2 CareerEDGE Model

To overcome limitations of the USEM model, Dacre Pool and Sewell (2007) developed the CareerEDGE model. CareerEDGE is a prominent and widely used model of graduate employability. As of 16 August 2015, a search on Google Scholar returned over 206 results for the keyword “CareerEDGE Model”, indicating its popularity among scholars. CareerEDGE (Figure 2) is made up of two sections: CareerEDGE and Reflection and evaluation. CareerEDGE comprises of career development learning; experience - work and life; degree subject knowledge, skills and understanding; generic skills and emotional intelligence (Dacre Pool & Sewell, 2007). Reflection and evaluation emphasises the importance of providing students with opportunities to reflect on and evaluate the learning experiences that have taken place. Reflection and evaluation is fundamental to the development of self-efficacy, self-confidence and self-esteem, which are vital links to employability (Dacre Pool & Sewell, 2007).



Figure 2: The CareerEDGE Model (Dacre Pool & Sewell, 2007, p. 280)

According to Dacre Pool and Sewell (2007), missing any element in the model will greatly reduce a graduates employability. Dacre Pool and Sewell (2007) claim that the strength of CareerEDGE lies in its simplicity as it can be explained to students, parents and academics with ease, therefore overcoming limitations of the USEM Model. This is supported by UK's Higher Education Academy (HEA) which recently switched to Dacre Pool and Sewell's (2007) CareerEDGE model, asserting it to be a broader and more approachable model of employability for students, that both reflects the USEM and extends it to include emotional intelligence, work and life experience, self-confidence and self-esteem (Eden, 2014). CareerEDGE also provides information on what should be considered when planning programmes and interventions on employability, and is a great tool for knowledge transfer activities (Dacre Pool & Sewell, 2007). Concepts from CareerEDGE have been used in various employability studies including Ehiyazaryan and Barraclough (2009), Wickramasinghe and Perera (2010) and Coetzee and Esterhuizen (2010).

The CareerEDGE model however, has been criticised as a narrow conceptualisation of employability as it mainly focuses on supply side dimensions (Green et al., 2013). According to Green et al. (2013), the CareerEDGE model focuses on an individual's specific transferable employability skills and does not take into consideration the broader context. Nonetheless, the current research focus is on individual graduate employability factors and not on the broader context that includes personal circumstances and external factors. Therefore the CareerEDGE model has been evaluated as suitable for the research. Although CareerEDGE is a prominent model of graduate employability, like Eden (2014) and Jackson (2014a), the researcher acknowledges that its complexity and focus on non-technical (employability) skills is only one way of conceptualising employability. The individual components that make up CareerEDGE are discussed in detail next.

## **2.5 Individual Graduate Employability Factors**

This section focuses on the nine components that make up the CareerEDGE model.

### **2.5.1 *Career Development Learning***

The first component of CareerEDGE is Career Development Learning (CDL). CDL involves assisting students to be more self-aware, to understand their personalities and interests, to best research job markets for opportunities, to effectively present themselves to prospective employers and to make considered career decisions (Dacre Pool & Sewell, 2007). According to Dacre Pool and Sewell (2007), CDL assists graduates to secure jobs in which they can be successful and satisfied.

CDL bears much similarity to the notion of deployment skills, described by Hillage and Pollard (1998) as the extent to which an individual is aware of their attributes, and how they choose to use that knowledge. In their study, Hillage and Pollard (1998) divide deployment skills into career management skills, adaptability and mobility, and job search skills. Career management skills refers to an awareness of one's personalities, strengths and weaknesses; an awareness of opportunities in the labour market; having good presentation skills (application forms, CVs, interviews etc.), having good transitional skills and being able to make considered career decisions (Bridgstock, 2009; Hillage & Pollard, 1998; Watts, 2006). According to Lowden et al. (2011), a student's awareness of opportunities in the labour market affects their employability.

Adaptability and mobility refers to the extent of an individual's mobility in seeking work (Evans, Simmonds, & Nathan, 1999) and involves being realistic about labour market opportunities, and being adaptable to labour market developments (Bezuidenhout, 2011). Examples include occupational mobility, locational mobility, wage flexibility, and a willingness to consider jobs across a range of sectors (Hillage & Pollard, 1998; McQuaid & Lindsay, 2005). According to Bezuidenhout (2011), adaptability is essential for career success, and its significance in employability is well supported within the employability literature.

Job search skills refer to how well a person identifies and searches for jobs including: the amount, efficiency and effectiveness of the job-search effort; the awareness and effective use of appropriate technologies, formal search services, informal social networks and information resources; an awareness of labour markets; and the appropriateness of the type of job sought (Jackson, 2013b; McQuaid & Lindsay, 2005). A number of employability studies show that graduates who start the job search process early and actively seek work have a better chance of securing employment (Archer & Chetty, 2013; Jackson, 2013b). It has also been suggested that some graduates fail to secure employment due to difficulty in translating job applications into interviews (Archer & Chetty, 2013). Moreover, the ability to select effective job-search channels is also important as it impacts on employability (McQuaid & Lindsay, 2005). Thus graduates need to be taught how to market their knowledge and skills in a written format, and how to effectively respond to adverts (Archer & Chetty, 2013). Generally, graduates with fewer resources and weaker job search skills run the risk of unemployment being long term (Smith, 2011).

### **2.5.2 *Experience - Work and Life***

Work experience, sometimes referred to as work based learning or work-integrated learning, is derived from doing a job or taking a workplace role (Jackson, 2013d; Little, 2006). This can be in the form of a student doing work placement as part of a curriculum, or taking up an internship or part-time job (Archer & Chetty, 2013; Jackson, 2013d). This includes full-time employees furthering their skills in a HE setting (Jackson, 2013d; Purdie, Ward, Mcadie, King, & Drysdale, 2013). Work experience enables graduates to integrate the theoretical knowledge that they have learned with practical work in a professional setting (Rodzalan & Saat, 2012). Graduates with work experience therefore have wider life experiences which they bring and are able to apply at work (Dacre Pool & Sewell, 2007). Moreover, work experience enables students and graduates to realise their potential as well as identify areas which they need to improve (Carbone & Hamilton, 2016). Employers thus value work experience and often use work experience and qualification as the basis for selecting and evaluating potential candidates (Dacre Pool & Sewell, 2007; Jackson, 2013b; Thurairajah & Lees, 2010).

According to Tymon (2013), work experience has a positive effect on employability. It has also been agreed that graduates who have obtained sufficient prior work experience are more likely to secure employment than those who have none (Purdie et al., 2013; Tan & French-Arnold, 2009; Tymon, 2013). In addition to securing employment, graduates with work experience are reported to have more favourable outcomes in terms of wages and career progression (Jackson, 2013d; Purdie et al., 2013). However, some researchers argue that work experience does not necessarily translate into enhanced skill outcomes, therefore stressing the need for further research in this area (Jackson, 2013d).

### ***2.5.3 Degree Subject Knowledge, Skills and Understanding***

Degree subject knowledge, skills and understanding is the central concept of Dacre Pool and Sewell's (2007) CareerEDGE model and is based on the fact that the more qualified have greater employment opportunities. Many researchers acknowledge that the probability of employment increases with level of qualification (Dacre Pool & Sewell, 2007; McQuaid & Lindsay, 2005; Mohamad & Hamcah, 2009; Taylor et al., 2012). In South Africa, research shows substantial differences between unemployment rates according to level of education (Archer & Chetty, 2013; Van der Berg & Van Broekhuizen, 2012) with graduates having a 20-25% more likelihood of getting a job than grade 12 matriculants (Van der Berg & Van Broekhuizen, 2012). Moreover, it was found that most discouraged job seekers in South Africa had not completed secondary school, and that completing secondary school alone had a substantial effect on successfully finding employment (Smith, 2011).

Academic performance plays a major role in securing employment as it is often the only measure available to employers (Dacre Pool & Sewell, 2007; Lowden et al., 2011; Mohamad & Hamcah, 2009). Employers therefore evaluate graduates based on how successfully they have completed their degree course (Thurairajah & Lees, 2010). Thus graduates who possess pronounced knowledge and skills in their study domain get hired first (Singh & Singh, 2008). This applies even in cases where the graduate is entering an occupation with no relevance to their qualification (Dacre Pool & Sewell, 2007). According to Garrido, Sullivan and Gordon (2006), an increase in skills, experience and competitiveness will result in a corresponding increase in one's employability.

The oversupply of graduates in certain fields, and lack in others (Tan & French-Arnold, 2009) makes degree type a key determining factor of employability. According to researchers (Altman, 2007; Rasool & Botha, 2011), graduate unemployment is a big problem in South Africa partly because students are not studying appropriate subject areas and tertiary institutions end up producing graduates in fields where the demand for skills is not growing. Students enrol in over-subscribed programmes resulting to a mass of graduates unable to secure employment in their fields of study, therefore ending up underemployed or unemployed (Singh & Singh, 2008; Tan & French-Arnold, 2009). The IS field continues to show promise, with demand for IS skills increasing over the past few years and expected to continue to grow (Simon & Jackson, 2013). However Van der Berg and Van Broekhuizen (2012) argue that there is not enough evidence to suggest that field of study has a major effect on graduate unemployment in South Africa, thus prompting the need for further research in this area.

#### **2.5.4 *Generic Skills***

In addition to academic capabilities, graduates are expected to possess qualities and competencies that will enable a speedy and successful transition from HE to the work place (Archer & Chetty, 2013; Jackson, 2013b; Smith & Bauling, 2013). These competencies are referred to as generic, key, core or transferable skills. Generic skills are defined as “skills which can support study in any discipline, and which can potentially be transferred to a range of contexts, in HE or the workplace” (Dacre Pool & Sewell, 2007, p. 282). Examples of generic skills include creative thinking, problem solving, communication, teamwork and analytical skills (Dacre Pool & Qualter, 2013; Singh & Singh, 2008; Tan & French-Arnold, 2009). However, some academics argue that the notion of transferable skills is flawed, stating that skills developed in one context are not easily transferred to another (Ashe, 2012). In 2010, Sewell and Dacre Pool incorporated enterprise skills within the generic skills component of the CareerEDGE model. Sewell and Dacre Pool (2010) defined enterprise skills as “the skills, knowledge and attributes needed to apply creative ideas and innovations to practical solutions” (p. 90).

According to employers, technical skills are only important in the selection process for technical roles (Carbone & Hamilton, 2016). Moreover, it is assumed that ICT graduates already have the required technical skills (Carbone & Hamilton, 2016). Employers report that they are more interested in the generic skill capabilities of ICT graduates, which were believed to be critical for a sustained and successful career (Carbone & Hamilton, 2016). Employers acknowledge that a degree or qualification is necessary but insufficient to secure a job (Archer & Chetty, 2013), even in the case where the graduate has a high grade point average (Tan & French-Arnold, 2009). The possession of skills which are not easily substitutable increase one's bargaining power, economic gain (Garrido et al., 2010) and likelihood of attaining full-time employment (Jackson, 2013b). Likewise, it was reported that students in an IT management for Business course who had invested at least 20% of their time on personal and inter-personal skills, had high employment rates and were greatly appreciated by businesses (Elliott & Dawson, 2015).

While executives in South Africa are mostly satisfied with the disciplinary knowledge of students, they perceived noteworthy gaps in student's transferable skills, IT skills and personal qualities (McCowan, 2014). *Figure 3* shows the results of a 2013 South African Graduate Recruitment Association (SAGRA) survey in which South African employers rated the importance of different skills (Very important), as well as their satisfaction level of the actual skills of graduates (Very satisfied). The SAGRA survey results show considerable gaps between employer expectations and the actual skills that graduates bring to work.

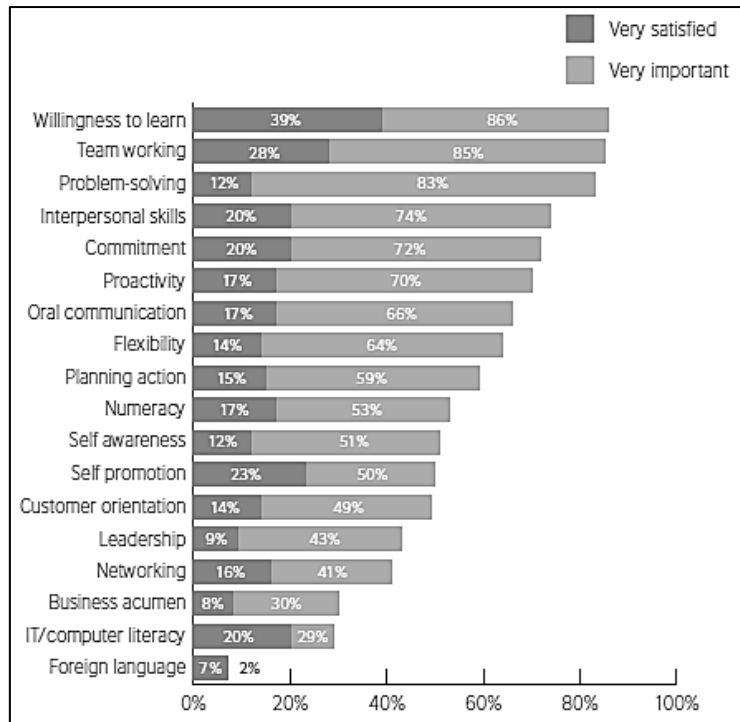


Figure 3: Importance of Graduate Skills in South Africa (McCowan, 2014, p. 6)

According to Bringula et al. (2016), there are skills that need to be prioritised and those that are important but of least priority. Bringula et al. (2016), conducted a study in which academics and industry practitioners rated the importance of 10 skills considered desirable for IT graduates. These included IT, critical thinking, communication, problem solving, human relation, leadership, planning, research, training, coaching and entrepreneurship skills (Bringula et al., 2016). The results showed that academics and practitioners placed equal value on the importance of each skill except for problem solving skills, where practitioners ranked it higher than academics (Bringula et al., 2016). Moreover, employers reported to look at graduates' attitude and personal background in cases where graduate applicants had similar set of skills (Bringula et al., 2016).

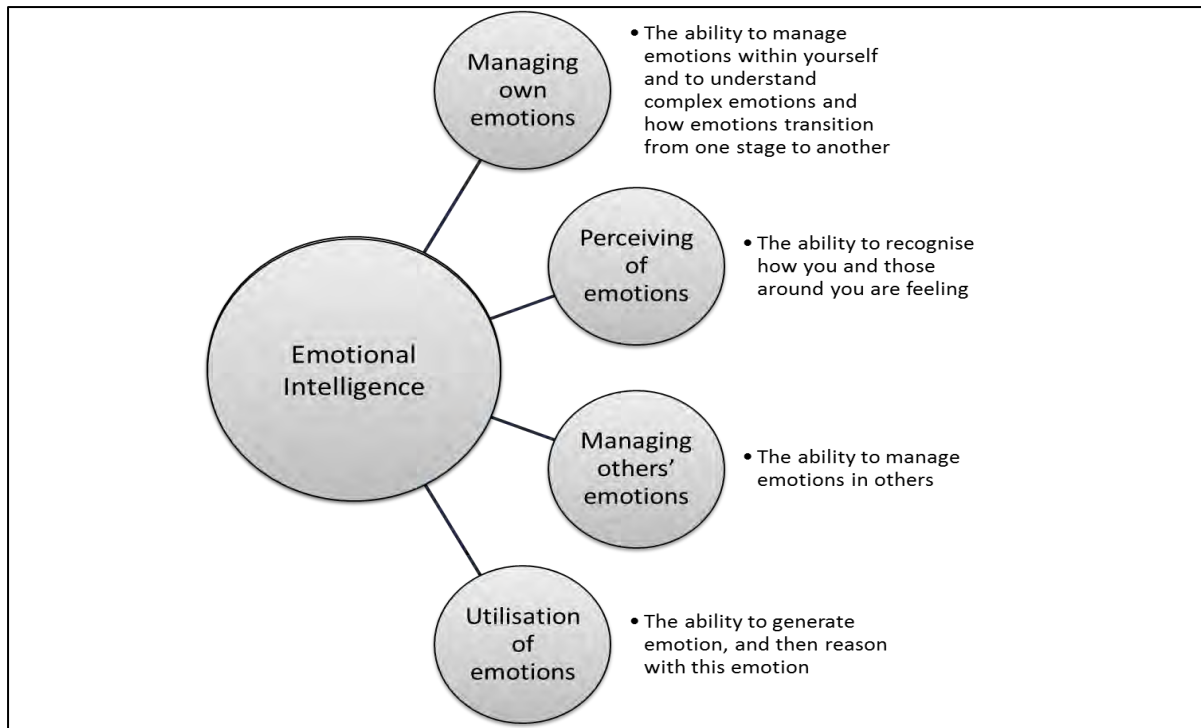
There are numerous lists of employability skills with considerable similarities that have been produced by researchers (Ashe, 2012; Holmes, 2013; Holtzhausen, 2012; Marock, 2008; Wickramasinghe & Perera, 2010), although there is no universally agreed upon classification (Holmes, 2013). Researchers suggest the need for further empirical research into generic skills and competencies as potential predictors of employability (Dacre Pool & Qualter, 2013).

### **2.5.5 Emotional Intelligence**

Emotional intelligence (EI), also referred to as emotional competency or literacy (Armour, 2012; Bezuidenhout, 2011), is an important element of graduate employability (Bezuidenhout, 2011; Dacre Pool & Qualter, 2013; Potgieter & Coetzee, 2013). According to Marzuki, Mustaffa and Saad (2015), general intelligence (IQ) alone cannot guarantee individual success in life. Moreover, psychologists report that only 20% of individual success in life is as a result of IQ, while the remaining 80% is due to other factors such as emotional intelligence (Marzuki et al., 2015). Thus employers are not only looking for candidates with high IQ's, but with good levels of emotional intelligence as well (Marzuki et al., 2015).

EI theory defines emotions as significant social functions that convey information about other's intentions, thoughts and behaviour (Brackett, Rivers, & Salovey, 2011). Goleman (1998), the founder of EI defines EI as "the capacity for recognising our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (Goleman, 1998, p. 317). EI incorporates both interpersonal and intrapersonal intelligence (Coetzee & Schreuder, 2011) and is conceptualised as an ability similar to cognitive intelligence as it forms a major part of our thinking, reasoning and intelligence (Coetzee & Harry, 2014). However, EI differs from cognitive intelligence in that it is a latent trait that may or may not be displayed in one's everyday functioning (Coetzee & Harry, 2014). For example, a person may be very good at reading other people's emotions as well as managing their own emotions, but may decide not to use this ability due to a lack of motivation or lack of emotional self-efficacy (Dacre Pool & Qualter, 2013). It is suggested that individuals will often act based on their emotional self-efficacy, or the belief they have about their abilities, as opposed to their actual abilities (Dacre Pool & Qualter, 2013).

Salovey and Mayer (1990) divided EI into four interrelated components which include managing one's own emotions, perceiving emotions, managing other's emotions and use of emotions to facilitate thought (Armour, 2012; Brackett et al., 2011; Coetzee & Beukes, 2014; Potgieter & Coetzee, 2013). Salovey and Mayer's (1990) four branch model of EI (*Figure 4*) forms the basis of many EI measures, and is widely accepted by researchers (Dacre Pool & Qualter, 2012).



*Figure 4: Emotional Intelligence adapted from (Coetzee & Harry, 2014, p. 95)*

Research shows that EI develops over one's lifespan and can be improved through training and teaching schemes on emotion management and functioning strategies (Coetzee & Harry, 2014; Dacre Pool & Qualter, 2013; Potgieter & Coetzee, 2013). EI is positively correlated with academic achievement (Armour, 2012; Dacre Pool & Sewell, 2007), as attention which is necessary for learning, is facilitated by positive emotional engagement (Armour, 2012). In 2015, Marzuki et al. conducted a study which found EI to be positively related to the development of communication and information technology skills, thus confirming EI as an intellectual resource necessary for the development of other skills and competences.

EI is seen as a career enabler leading to higher levels of employability and career success (Potgieter & Coetzee, 2013). EI alone was found to be the biggest factor for success among 42000 successful individuals (Elliott & Dawson, 2015). Moreover, EI was identified as a success factor for projects in The CHAOS Manifesto 2013 publication by The Standish Group (Elliott & Dawson, 2015). The Standish Group is an independent international IT research advisory firm who for years have gathered data on why projects fail or succeed (Elliott & Dawson, 2015). Ouyang, Sang, Li and Peng (2015) conducted a study involving

420 employees from a large scale IT Company in China. Ouyang et al.'s (2015) study found that EI had a positive impact on job satisfaction. Likewise, according to positive psychology theory, people with high levels of EI tend to enjoy better career satisfaction and success (Dacre Pool & Qualter, 2013), have better interpersonal skills (Armour, 2012), develop stronger personal relationships and often motivate themselves and others to achieve more (Brackett et al., 2011; Dacre Pool & Sewell, 2007; Potgieter & Coetzee, 2013). Several South African studies confirm the impact of EI on job performance and leadership success (Potgieter & Coetzee, 2013). However, Coetzee and Beukes (2014) claim that emotions from a career perspective in South Africa have received little attention, and there is a lack of research on the relationships between EI, employability and satisfaction with career support, thus prompting the need for further research in this area.

### **2.5.6 Reflection and Evaluation**

Various frameworks portray students as lifelong learners that engage in reflective processes, are self-aware, have regard for others and possess a range of generic skills (Holtzhausen, 2012). Reflection and evaluation in CareerEDGE emphasises the importance of providing students with opportunities to reflect on and evaluate the learning experiences that have taken place (Dacre Pool & Sewell, 2007). According to Jackson (2014b), the reflection and evaluation process is important for graduate employability and is greatly valued by industry. Reflection and evaluation is key to the development of self-efficacy, self-confidence and self-esteem (Dacre Pool & Sewell, 2007; Jackson, 2014b).

Jackson (2014b) emphasises the importance of self-assessments in addition to formal assessments such as performance reviews and oral or written assessments. Dacre Pool, Qualter and Sewell (2014) introduced an Employability Development Profile (EDP) aimed at assisting students develop their employability by enforcing them to reflect on their employability strengths, weaknesses and corresponding plan of action. The EDP was used by students before and after a career development learning course, with significant increases found in the career development learning items, thus supporting its use as a development or measurement tool for the design, implementation and evaluation of employability programs (Dacre Pool et al., 2014).

### **2.5.7 Self-efficacy**

Self-efficacy refers to a belief in one's ability to organise and execute actions required to achieve goals (Dacre Pool & Sewell, 2007). Efficacy beliefs determine how people feel, act, think and motivate themselves (Dacre Pool & Sewell, 2007). Gibbs et al. (2011) explain that one's judgment, which is often shaped by prior experience, will determine how they handle various situations in different domains. Self-efficacious people take on more challenging tasks, persevere and experience less stress and anxiety in learning environments (Turner, 2014). Self-efficacy has a significant effect on performance (Turner, 2014) and is reported to be a better predictor of performance than actual capability (Gibbs et al., 2011). Moreover, self-efficacy is reported to be essential for academic achievement and positive contribution to society after graduation (Turner, 2014).

Self-efficacy is believed to be malleable and therefore can be improved through mastery experiences (Turner, 2014), vicarious experiences and social persuasion combined with reflection and evaluation (Dacre Pool & Sewell, 2007). Mastery experiences involve letting people try out particular tasks such as CV writing, job applications and work experience (Dacre Pool & Sewell, 2007). Vicarious experiences occur when students are given the opportunity to see and identify with others that have achieved success, such as a successful graduate returning to speak to students from an institution they previously attended (Dacre Pool & Sewell, 2007). Social persuasion occurs when an individual is persuaded that they possess certain capabilities (Dacre Pool & Sewell, 2007), often resulting in them feeling motivated to achieve their goals.

According to Turner (2014), a student's self-belief should be developed through the discipline studied. This is supported by Archer and Chetty's (2013) study, where graduates from UNISA indicated that their studies, as well as employment during studies, had contributed highly to their meta-cognitive skills, employment skills as well as efficacy beliefs. However, the embedded approach used for the development of skills has not been extended to efficacy beliefs in many employability models (Turner, 2014). Moreover, there has not been a clear indication of how and where to develop efficacy beliefs within HE (Turner, 2014). Although self-belief appears in Yorke and Knight's (2006) model, it is not

portrayed as intricately wound within the learning discipline (Turner, 2014). Furthermore, according to Yorke and Knight (2006), self-efficacy is immeasurable and cannot be quantified (Turner, 2014).

### **2.5.8 *Self-Confidence***

Self-confidence is a common element that appears in many graduate employability studies (Bezuidenhout, 2011; Dacre Pool & Sewell, 2007; Lowden et al., 2011). Self-confidence is described as the “belief in one’s ability to achieve one’s goals” (Turner, 2014, p. 595). Dacre Pool and Sewell (2007) portray self-confidence as the way in which one’s self-efficacy is projected to the outside world, and claim that self-confidence can be observed from one’s behaviour. People with self-confidence carry a sense of self-assurance and presence (Dacre Pool & Sewell, 2007; Goleman, 1998).

Self-confidence can be viewed as either a trait or situationally specific concept. As a trait, self-confidence remains relatively stable over time and cannot be developed or improved through educational activity (Dacre Pool & Sewell, 2007). As a situationally specific concept, self-confidence can be improved from any given situation, and an increase in self-efficacy will reflect a corresponding increase in self-confidence (Dacre Pool & Sewell, 2007). These concepts bear similarity to the malleable and fixed self-theories that appear in Yorke and Knight's (2006) USEM model. People with fixed self-theories believe their abilities are fixed and cannot be improved, while those with malleable self-theories believe their abilities are malleable and respond to developmental efforts (Louis, 2011). Students reported to have developed self-confidence as a result of their HE study (Turner, 2014) thus supporting the idea that self-theories are malleable and respond to developmental efforts (Louis, 2011; Turner, 2014).

### **2.5.9 *Self-esteem***

Self-esteem is a major part of employability (Dacre Pool & Sewell, 2007) and refers to one’s overall perception of themselves or how they feel about themselves (Turner, 2014). An important aspect of self-esteem is the ability to project one’s belief in their own ability to succeed, to others and the outside world. People with self-esteem value themselves and are

realistic about their own evaluations of themselves (Dacre Pool & Sewell, 2007). These evaluations enable reflection on areas of improvement, therefore encouraging a process of lifelong learning (Dacre Pool & Sewell, 2007).

According to Turner (2014), self-esteem is a pre-requisite for academic success. Likewise, educational psychologists claim that self-esteem has a great influence on one's level of achievements (Dacre Pool & Sewell, 2007). Research shows that self-theories such as self-esteem can be altered through brief interventions (Louis, 2011). Turner (2014) stresses the importance of including context when addressing issues of self-belief. According to Turner (2014), central to the development of self-belief is the belief that that ability can be improved, that one has the ability to plan and implement actions to achieve goals and that the context will allow for goal achievement. The inclusion of context enables a balance of focus between what one is lacking and considerations of the ability and control allowed by the context (Turner, 2014). Turner (2014) claims that people tend to gravitate towards an internal or external locus of control (LOC). People with an internal LOC believe they control life events while those with an external LOC believe they have no control over events (Bezuidenhout, 2011; Turner, 2014). The LOC has been linked to academic achievement and students with an external LOC have a higher risk of dropping out from their studies (Turner, 2014).

#### ***2.5.10 Individual Graduate Employability Factors: Research Question 1***

The preceding discussion on individual graduate employability factors leads to the development of research question RQ1:

- RQ1.** What individual factors affect the employability of IS graduates in Cape Town, South Africa?

## 2.6 Graduate Employability Responsibility

Crucial to the development of graduate employability, is identifying the relevant bodies responsible for the development of employability in graduates. According to a survey in the United States of America (USA), the primary responsibility of instilling workforce readiness in new entrants lies in the educational system (Casner-Lotto & Barrington, 2006). Furthermore, governments and businesses expect universities to provide resources and opportunities for students to develop work readiness skills (Ashe, 2012). Education systems have therefore been intensively criticised for not producing enough graduates and failing to impart the right skills and knowledge to graduates (David, David, & David, 2011; Tomlinson, 2012). The failure to produce work-readiness in graduates has been attributed to the universities' rigid focus on "academically oriented provision and pedagogy", and not giving enough attention to "applied learning and functional skills" (Tomlinson, 2012, p. 412). However, the view that HE can and should produce work readiness in graduates is not entirely shared (Tymon, 2013). According to Simon and Jackson (2013), non-technical IS skills often require development outside the classroom. Moreover, IS educators admit that they are "concerned about not being able to mimic business environments in a classroom setting to teach required skills" (Simon & Jackson, 2013, p. 52). Hence academics argue that tertiary institutions should not be training graduates for jobs, as this is the responsibility of employers (Tymon, 2013). Others argue that HE is just one stage in the biographical trajectories of students and therefore should not be expected to alone prepare students for work (Holmes, 2013; Sirat et al., 2009).

Tan and French-Arnold (2009) suggest that the task of producing work readiness in graduates should be spread throughout the entire educational system including primary, secondary and post-secondary stages. However, there is a limit to how much education establishments can teach in terms of knowledge and skills, even in cases where extensive efforts are made to simulate a work situation (Little, 2006). Furthermore, there is no evidence to support the effect of university employability skills development on employability (Tymon, 2013). In fact, a lot of the skills that employers are looking for can only be developed in real life situations, even on a short-term basis such as work placements lasting as little as two weeks (Little, 2006; Tymon, 2013). This is supported by Jackson (2013d) who reported

improvement in an entire set of ten employability skills for 131 undergraduate Australian students, following a period of work placement.

Employers however are becoming more reluctant to invest in the training of employability skills in graduates due to economic pressures and the belief in a lack of commitment from generation Y (Tymon, 2013). Furthermore, although there is numerous evidence regarding employer skill expectations and requirements, this rhetoric has not been matched with genuine commitment from employers to facilitate and help graduates develop their existing skills (Tomlinson, 2012). Thus according to Tomlinson (2012), the main issue with graduate employability might not be that there is a deficit in the skills that graduates possess, but rather that there is an over-supply of graduates that employers find challenging to manage.

The discourse on employability reflects an increasing onus on the graduate to continually up skill and improve their employability, particularly in an era where careers are not bound to a single organisation or specific job type (Tomlinson, 2012). Yorke and Knight (2006) state that students often limit themselves by focusing only on what is offered in their curriculums and do not read around the subject. McCowan (2014) explains that learning experiences outside the university such as family and previous schooling also influence graduate capabilities. Therefore parents as well play an important role in workforce readiness as they are considered responsible for instilling the importance of learning, work and career in their children (Casner-Lotto & Barrington, 2006).

The need for academia-industry collaboration in the preparation of work-ready students is well documented (Bringula, Balcoba, & Basa, 2016; Simon & Jackson, 2013). Graduate employability needs to be equally shared among individuals, businesses and public bodies (Lowden et al., 2011). According to Marock (2008), South Africa needs to develop policies and interventions that involve improving the quality of the education system, aligning curriculums to labour market needs, providing career guidance, preparing scholars for the school to work transition and encouraging employers to employ young people.

### **2.6.1 Graduate Employability Responsibility: Research Question 2**

The preceding discussion on graduate employability responsibility leads to the development of research question RQ2:

**RQ2.** Who is responsible for graduate employability in South Africa?

## **2.7 Embedding Employability into Curriculums**

There are a number of different strategies for embedding employability into the curriculum. However, there is no ‘one size fits all’ approach due to differences in curricula, context and the complex nature of employability (Coady & Berg, 2014; Yorke & Knight, 2006). Some tertiary institutions strategically map graduate attributes across curriculums to ensure that these are visible across entire course programs (Napiah et al., 2012). Other learning institutions do not explicitly reference employability but use transferable skills to closely map to employability skills (Shawcross & Ridgman, 2013).

Yorke and Knight (2006) suggest five different ways in which employability can be embedded into the curriculum. These include embedding employability throughout the whole curriculum, embedding employability in the core curriculum, incorporating work based learning in the curriculum, including employability related modules in the curriculum and including work based learning in parallel with the curriculum (Yorke & Knight, 2006). According to Yorke and Knight (2006), although embedding employability in the whole curriculum has the greatest potential for enhancing employability, incorporating employability modules and work based learning in parallel with studies may be the most practical. There have also been discussions around the advantages and disadvantages of embedding employability into the curriculum (embedded employability) or treating it separate from other learning (bolt on provision) (Green et al., 2013). Embedded employability has the disadvantage of students not being aware that they are developing employability skills, whereas bolt on provision has the disadvantage of students lacking the motivation to engage in the learning process (Green et al., 2013). Thus working with both approaches may yield more favourable results with students (Green et al., 2013).

Although it is important to ensure that students have access to appropriate channels for enhancing employability, equally important is ensuring the use of effective teaching methods (Jackson, 2013b). Theory suggests that effective learning requires “a clear understanding of the value of presented material and associated activities, enhanced by constructive alignment with explicit learning outcomes” (Jackson, 2013c, p. 3). There are a number of ways in which employability can be imparted to students during the learning process. The problem based learning approach involves learning through solving an open ended problem (Napiah et al., 2012). Experiential learning theory emphasises the process of learning through experience (Kolb & Kolb, 2009). Other theories on learning employability skills include communication theory, teamwork theory, critical thinking and problem solving theory, and moral and professional ethics theory (Rodzalan & Saat, 2012).

Universities need to incorporate generic competencies in addition to subject-specific skills in their curriculums in order for graduates to become employable (Holtzhausen, 2012). Relevant IS programmes need to engage industry and students as stakeholders; improve teaching strategies by adopting active approaches to learning that include experimental elements, internships, workshops and guest speakers; periodically tune curriculum content to align with and reflect the views of industry and students (Calitz, Cullen, & Greyling, 2015; Carbone & Hamilton, 2016; Coady & Berg, 2014).

### **2.7.1 *Embedding Employability into Curriculums: Research Question 3***

The preceding discussion on embedding employability into curriculums leads to the development of research question RQ3:

**RQ3.** How can employability be embedded into South African curriculums?

## 2.8 Literature Review Summary and Conceptual Framework

The review of the literature showed that graduate employability has been a common subject among researchers. Furthermore, the concept has been widely researched, debated and modelled. However, while there is a lot of information and numerous models that inform on graduate employability, there has been very limited empirical research focusing on individual graduate employability factors as a whole. Moreover, confusion exists between issues of graduate employability responsibility and there is a lack of clear standards on appropriate methods for embedding employability into the curriculum. The literature review builds up to the following three questions driving the research:

- RQ1.** What individual factors affect the employability of IS graduates in Cape Town, South Africa?
- RQ2.** Who is responsible for graduate employability in South Africa?
- RQ3.** How can employability be embedded into South African curriculums?

Based on the purposes of this research, Yorke and Knight's (2006) definition of employability, Dacre Pool and Sewell's (2007) CareerEDGE model and a review of the existing literature on graduate employability, a conceptual model suitable for guiding the research was developed. The conceptual model depicted in *Figure 5* identifies the key concepts to be studied and the relationships between them. The conceptual model is not comprehensive in its list of employability factors as the research focus is on individual employability factors only.

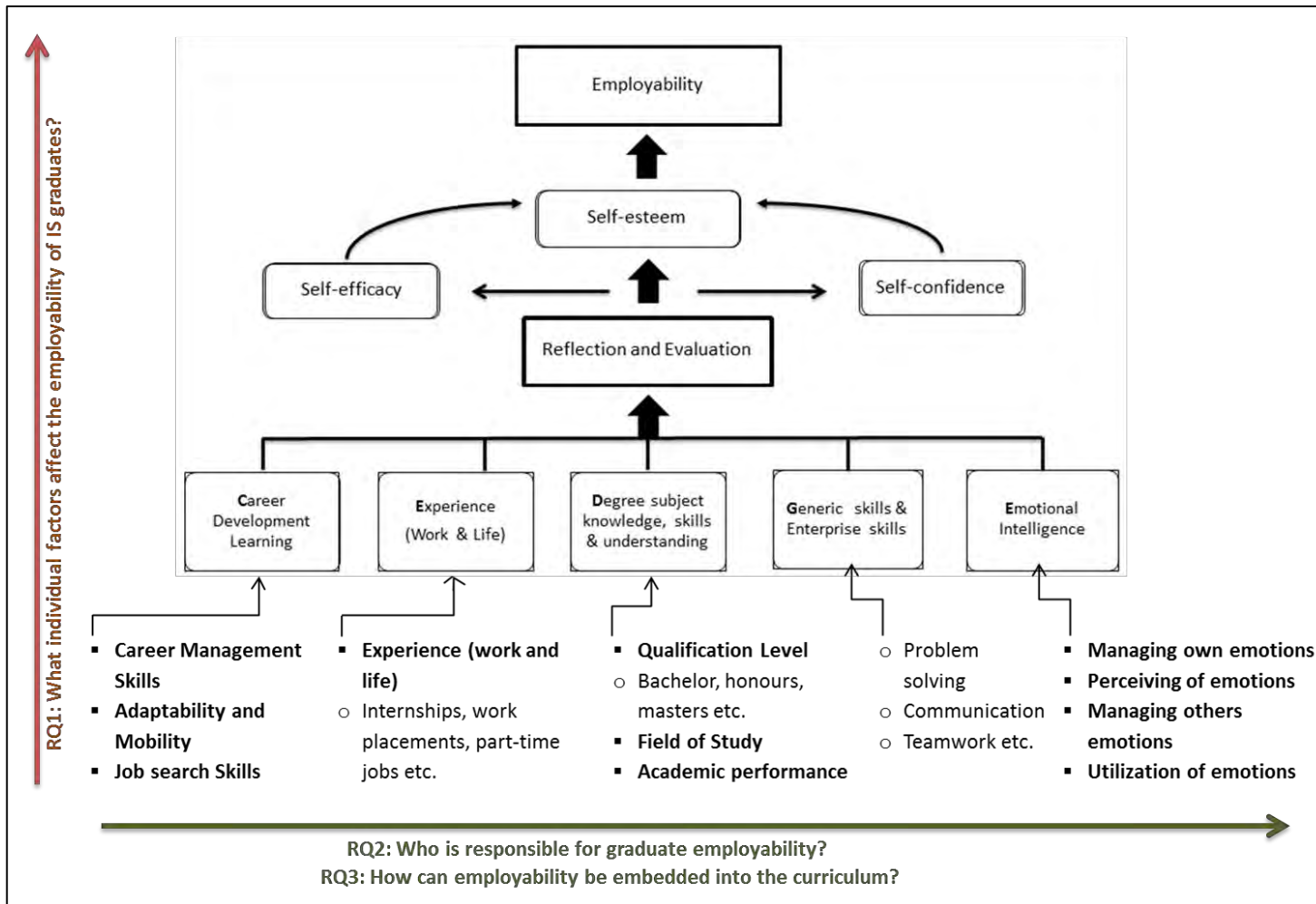


Figure 5: Conceptual Model of Individual Employability Factors adapted from (Sewell & Dacre Pool, 2010, p. 90)

## **3 RESEARCH DESIGN**

The purpose of this study is to identify, explore and analyse individual factors affecting the employability of Information Systems (IS) graduates in Cape Town, South Africa. This section covers the various methodologies, research instruments and decision choices made by the researcher in order to best guide the research process, and ensure the validity and reliability of results obtained. The chapter starts with the philosophical assumptions underpinning the research and guiding the choice of methodology. This is followed by the research paradigm and methodology. The subsequent section gives an account of the various tests of accuracy that were conducted in order to ensure the quality of the research. The next sections describe how ethical, confidential and integrity issues were handled and maintained throughout the research process. The research time frame is presented next and the chapter concludes with a summary of the overall research methodology.

### **3.1 Philosophical Assumptions**

According to researchers, all scientific research is based on a set of underlying philosophical assumptions regarding the nature of the object of study, the nature of valid evidence, and the correct research method to be used (Myers, 1997; Neuman, 2011; Orlikowski & Baroudi, 1991). These philosophical assumptions are divided into three main categories of belief systems that researchers adopt towards the world and their research: “beliefs about the phenomenon or object of study”; “beliefs about the notion of knowledge”; and “beliefs about the relationship between knowledge and the empirical world” (Orlikowski & Baroudi, 1991, p. 7). These philosophical assumptions and the corresponding philosophical stance of the researcher are presented next.

#### **3.1.1 *Ontology and Epistemology***

Ontological beliefs are those associated with the phenomenon under study and refer to beliefs about the nature of reality and humanity (Orlikowski & Baroudi, 1991; Tuli, 2010). There are two opposing views on ontology: beliefs that social and physical worlds are objective and

independent of humans (objectivist view), or subjective and exist only as a result of the actions and interactions of humans (constructionist view) (Orlikowski & Baroudi, 1991; Tuli, 2010). The research takes the constructionist view of the world as it is subjective and dependent on the perspectives and interpretations of human actors to bring insight into the concept under study (Orlikowski & Baroudi, 1991).

Epistemological beliefs on the other hand, are assumptions about knowledge (Myers, 1997). They address the question: what constitutes valid knowledge and how can knowledge be obtained and justified (Myers, 1997; Orlikowski & Baroudi, 1991). Within the IS domain, three predominant research paradigms or underlying epistemologies exist: positivist, critical and interpretive (Myers, 1997; Orlikowski & Baroudi, 1991). Based on the ontological assumptions underpinning the research and an analysis of the three paradigms, the interpretive research paradigm was selected for the research. Analogous to the interpretive paradigm, the research focuses on understanding employability factors by appreciating the different constructions and meanings that people place on reality based on their experiences (Myers, 1997; Noor, 2008). According to Orlikowski and Baroudi (1991) and Myers (1997), interpretive researchers believe in the existence of a social reality that is constructed and reinforced through the actions and interactions of humans; and thus can only be described using social constructions such as interpretations, languages and shared meanings (Myers, 1997). Thus the interpretive paradigm matches the purposes of the research.

Positivist on the other hand belief in the existence of a single external reality that can be objectively known and described through properties which are measurable and independent of the researcher and the research instruments, while the critical paradigm believes in the existence of a social reality that is historically constituted and created and recreated by humans (Myers, 1997; Orlikowski & Baroudi, 1991). Although the underlying philosophical assumptions for the critical paradigm bear similarity to that of the interpretive paradigm, the critical paradigm differs in that it aims to evaluate and critique the social systems under study and to change the status quo (Orlikowski & Baroudi, 1991). Thus both the positivist and critical paradigms were evaluated as inappropriate for the research.

## **3.2 Research Methodology**

Methodological assumptions are those that specify the research methods, techniques and procedures appropriate for collecting and analysing valid empirical evidence (Orlikowski & Baroudi, 1991). This section outlines the methodological assumptions of the research. It covers the research strategy, method (qualitative/quantitative), sampling techniques, sample size, data collection techniques and the data analysis techniques adopted by the research. These are discussed next.

### **3.2.1 Research Method (*Quantitative vs Qualitative*)**

Research methods refer to the data collection and analysis techniques used for the production of knowledge (Petty, Thomson, & Stew, 2012). Research methods are generally classified as either quantitative or qualitative. Quantitative research is concerned with the measurement of quantity or amount and applies to phenomena that can be expressed in terms of quantity (Biggam, 2008; King & Horrocks, 2010). Qualitative research, on the other hand, focuses on processes and meanings that are not examinable or measurable in terms of quantity, amount, intensity, or frequency (Noor, 2008), and “seek to arrive at an understanding of a particular phenomenon from the perspective of those experiencing it” (Vaismoradi, Turunen, & Bondas, 2013, p.398). While quantitative research is often used to test theories (Jackson & Verberg, 2007), qualitative research is used for in-depth exploratory studies where the opportunity for quality responses exists (Biggam, 2008).

According to Anderson (2010), educational situations are best researched using qualitative methods, as they often comprise of complex human interactions that cannot be studied, understood or described in simple terms. Furthermore, the main objective of understanding a phenomenon and its context from the viewpoint of those experiencing it is mostly lost when textual data is quantified (Myers, 1997). Thus qualitative methods have the further advantage of providing the researcher with deep insights that would not be possible with quantitative methods (Jackson & Verberg, 2007). However, qualitative methodologies have been criticised for their perceived lack of generalisability and lack of objectivity as the researcher becomes the research tool. Based on the purpose of this study, which includes exploring,

understanding and bringing insight into the concept of employability, the qualitative approach was evaluated as appropriate for the study.

### **3.2.2 *Research Strategy***

Research strategies, also referred to as methodologies, are described as a “strategy of enquiry that guides a set of procedures” (Petty, Thomson, & Stew, 2012, p. 378) or “which moves from the underlying philosophical assumptions to research design and data collection” (Myers, 1997, p. 246). The choice of strategy impacts on the type of data collection techniques to be used and is not restricted to a single data collection technique, but can use multiple techniques to collect data (Myers, 1997).

A number of qualitative research strategies were analysed prior to selecting the strategy for the research. These include phenomenology, ethnography, grounded theory and the case study approach (Myers, 1997; Petty et al., 2012). The phenomenology approach focuses on studying the as-lived experiences of people surrounding an event or phenomena, while ethnography is concerned with the study of cultures or people within their natural environment and grounded theory focuses mainly on the generation of theories (Biggam, 2008; Jackson & Verberg, 2007). The research is not focused on studying the experiences of people surrounding an event or cultures. The research is also not aimed at theory generation. Thus phenomenology, ethnography and the grounded theory approaches are not best suited for the research.

The case study approach was selected for the research. According to Yin (2003), a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 13). A case study researcher “typically observes the characteristics of an individual unit – a child, a clique, a class, a school or a community. The purpose of such observation is to probe deeply and to analyse intensively the multifarious phenomena that constitute the life cycle of the unit with a view of establishing generalisations about the wider population to which that unit belongs” (Cohen, Manion, & Morrison, 2007, p.258). The literature review demonstrated the broad, multi-dimensional and complex nature of employability (Mcgrath, 2009; Tymon, 2013). Moreover there are numerous

conceptualisations and definitions of employability and the boundaries between employability and learning are not clearly evident. Thus based on the nature and aims of the research, the case study approach was evaluated as most suitable for the study. The boundary for the study was IS graduates and IS employers in Cape Town, South Africa. South Africa (presented in section 1.3) was defined as the context, with IS graduates forming the case. According to Hyett, Kenny and Dickson-swift (2014), the limits and boundaries of a case study are very important. Moreover, case studies require an adequate description of context in order to understand the setting of the case; a case being defined as “an object to be studied for an identified reason that is peculiar or particular” (Hyett et al., 2014, p. 2).

### **3.2.3 *Sampling Technique***

It is highly unlikely for any researcher to be able collect data from the entire target population; as a result, data needs to be collected from a sample of the target population. Furthermore, sampling in qualitative research is a complex topic with many variations described in the literature, much confusion and overlapping of different sampling techniques.

The study used purposeful sampling with diversity as the main sampling technique. Purposeful sampling is one of the most common sampling techniques used in qualitative research (Anderson, 2010; Starks & Trinidad, 2007) and involves selecting research participants thought to be most informative based on the aims and needs of the research (Anderson, 2010). Although graduate employability can be viewed from three different perspectives: employer, student, HE institution (Tymon, 2013), the study focuses on graduate and employer perspectives only. According to Calitz et al. (2015), employers and alumni can provide important feedback regarding the effectiveness of an ICT program. Thus the target sample came from the following target population thought to be most informative based on the fact that they had first-hand experience with the phenomena of interest and would be able to discuss and provide rich descriptions:

- IS graduates in Cape Town, South Africa
- Employers, Managers and Recruiters of IS graduates or students in Cape Town, South Africa

The different sources of information allow for the credibility of data (Jackson & Verberg, 2007). Employers, Managers and Recruiters formed a crucial source of information for this study as they understand current industry skill requirements and would be able to elaborate on the employability skills requirements of graduates. Furthermore, employer's perspectives are crucial when it comes to understanding the transition between HE and the work place (Cai, 2012). Dacre Pool and Sewell (2007) also point out that questions regarding whether a graduate is using the skills, knowledge and understanding that they acquired from their degree need to be asked. Therefore, employed IS graduates are needed as they have the ability to bring insight into differences between the skills they were taught at university and the skills that they use at work. The inclusion criteria for graduates depended on them:

- Having graduated with an IS qualification obtained from a South African HE institute.
- Having graduated with the IS qualification within the past 5 years.
- Being currently employed within an IS profession.

The target sample was sourced from universities and companies that employ IS graduates. The study also made use of snowball sampling, where some of the research participants recommended other potential candidates for interviews (Marshall, 1996). The researcher initially approached working IS graduates from their university for interviews, as well as various individuals (employees, employers, friends etc.) who recommended other candidates for interviews. According to Marshall (1996), it is advisable to get maximum variation in a sample. In order to include maximum variation (diversity) in the sample, the target sample was not limited to age, race, gender, organisation, or university attended (Anderson, 2010; Boyce & Neale, 2006).

#### **3.2.4 *Sample Size***

Unlike quantitative research which often deals with large sample sizes (Patton, 1990), qualitative research deals with much smaller sample sizes due to the amount, detail and intensity of the work required (Anderson, 2010). The study design involved the use of focus group interviews as the data collection method. According to Boyce and Neale (2006), the general rule on sample size for interviews is that a sufficient sample size has been reached when similar themes, topics, issues and stories start emerging from the interviewees. This is

referred to as the saturation of categories, which denotes the point at which to end the research (Bowen, 2008).

A total of 6 focus groups and 2 individual interviews were conducted, resulting in a total of 26 candidates that were interviewed. Saturation was reached when similar themes started emerging from the interviewees, with no new themes being generated. To ensure data quality and avoid contaminating results, two of the interview results were discarded. This was due to one interview having inaudible data, and the other not meeting the inclusion criteria specified for the graduates, that is some of the participants did not have an IS qualification. This resulted in a total of 19 useable results comprising of 15 graduates and 4 employers.

### **3.2.5 Data Collection**

Qualitative methods of data collection include, but are not limited to participant observation, individual interviews and focus groups (Hassan, 2011; Myers, 1997; Petty et al., 2012; Vaismoradi et al., 2013). These were reviewed and the focus group interview method of data collection was selected for this research. Interviews, which are the most common used data collection method in qualitative research (King & Horrocks, 2010), involve talking and asking questions to people who have information, knowledge and experience relevant to the problem or opportunity being investigated (Hassan, 2011). When conducted at a group level, interviews are referred to as focus groups. While in-depth interviews may be more appropriate for probing into individual biographies, focus groups are good at determining attitudes, opinions, experiences (Kitzinger, 1995; Massey, 2011). Thus focus group interviews were evaluated as an appropriate data collection technique as the research focuses on obtaining opinions and perspectives of IS graduates and employers on employability, based on their experiences. Due to difficulty assembling focus groups comprising of employers, in depth interviews were used in cases where there was only one employer available for the interview.

Focus groups have the advantage of encouraging participation from people who are shy or reluctant to be interviewed on their own and who feel they have nothing to say (Kitzinger, 1995; Koopman-Boyden & Richardson, 2013). However, focus groups have been criticised

for their validity and reliability, although it has been argued that a lot of these limitations can be improved through skilful moderation (Koopman-Boyden & Richardson, 2013). Moreover, thematic coding of the data is a time-intensive and cumbersome process as the recorded audio or video data must be transcribed, coded and analysed (Boyce & Neale, 2006; Hassan, 2011; Turner, 2010). However, open-ended interviews often result in rich, thick data which helps reduce researcher bias, especially if the study involves a lot of participants (Turner, 2010).

A discussion guide was used to introduce questions to the group (Massey, 2011). The interviews were conducted in January 2015 over a period of 3 weeks. The interview schedule can be found under Appendix D. The interviews took place in a meeting or conference room at the various participants' workplaces and were tape recorded with notes taken when necessary (Ho, 2006; Kitzinger, 1995). The interviews were not videotaped due to time constraints of the study. Each interview lasted an average of 45 minutes to 1 hour (Koopman-Boyden & Richardson, 2013), and the breakdown included roughly 20 minutes for introductions, research briefing and signing of consent papers and 40 minutes for the actual interview and answering of questions. The next section describes the structure of the discussion guide used.

### **3.2.5.1 Structure of Discussion Guide**

The study used a discussion guide to introduce questions to the interviewees (Massey, 2011). A discussion guide includes a set of carefully planned questions or discussion points centred around the topic of interest and used to elicit conversations and guide discussions towards the research purpose (Ho, 2006; Massey, 2011). The discussion guide comprised of open-ended questions that were split into employer questions and their corresponding probes, graduate questions and their corresponding probes and a section describing the key information sought from the questions. The discussion guide can be found in Appendix C.

One of the issues highlighted in literature were the challenges surrounding measuring the concept of employability. In fact, only a few measures of employability have been published in literature (Dacre Pool & Qualter, 2013; Harvey, 2010; Rothwell & Arnold, 2007). A number of researchers highlight the confusion that exists between employment rates and employability (Dacre Pool & Qualter, 2013; Harvey, 2010; Tymon, 2013). The idea of using employment rates as a measure of employability is deeply flawed as the employment process

is mediated by a number of other factors that include the state of the labour market, university attended, ethnicity, subject studied etc. (Dacre Pool & Qualter, 2013; Harvey, 2010). Dacre Pool and Qualter (2013) therefore suggest that graduate employability might be something that resists objective measurement and as such, self-evaluation might be a more appropriate way of approaching this task.

The lack of a readily available tool or measure for employability lead to the development of interview questions that were largely based on findings from literature and the conceptual framework provided in section 2.8. The questions relied on the perspectives of graduates and employers, and were arranged in themes corresponding to the conceptual framework in section 2.8. Questions from the discussion guide were asked and redirected based on the flow of discussions during interviews (Ho, 2006; Turner, 2010). Table 1 shows the breakdown of questions per theme in the discussion guide.

Table 1: Breakdown of Discussion Questions

<b>Section</b>	<b>Theme</b>	<b>Employers</b>	<b>Graduates</b>
A	Demographics		
B	Career Development Learning/Deployment Skills	1	2
C	Experience-Work and Life	3	2
D	Degree Subject Knowledge, Skills & Understanding	2	1
E	Generic skills	2	3
F	Emotional Intelligence	1	1
G	Reflection and Evaluation	1	1
H	Self-Efficacy, Self Confidence & Self Esteem	1	2
I	Additional information (Covered graduate employability stakeholders/responsibility, and embedding employability into curriculums)	2	3
Total (Main Questions)		13	15

### **3.2.5.2 Pre-Test and Pilot Study**

Pilot testing is an important part of the interview process as it assists in determining limitations, flaws and any other weaknesses of the interview design (discussion guide) so these can be revised prior to the implementation of the study (Turner, 2010). Pilot tests also assist with refining of the research questions (Turner, 2010).

### **3.2.5.2.1 Pre-Test**

After evaluating previous research, 9 employability factors were identified and implemented as questioning themes in a discussion guide. The discussion guide was given to a second evaluator, an IT employee working as a developer in a financial services company, to assess the questions and perceived importance of each element included in the interview design, and to identify any omitted or overlapping items. The IT employee was selected based on their research experience as well as experience within the IT industry. The evaluation included going through each interview question with the employee and evaluating its applicability to the research. The outcomes from the discussion were used to refine the interview questions.

### **3.2.5.2.2 Pilot-Study**

The discussion guide went through a third evaluation which included interviewing 2 employed IS graduates (in order to simulate a mini-focus group). The two evaluators were included in a dry-run of the interview before the actual interviews with participants were carried out. The interview from the dry-run was recorded and the necessary modifications made to the discussion guide. The dry run revealed the need for a quieter venue as the initial venue used quickly turned noisy and impacted on the audio recording and data analysis. Thus alternative venues were organised for the actual interviews, resulting in most interviews conducted in conference or meeting rooms at the participant's place of work. The dry-run also revealed the need for the researcher to exercise more control over the discussions in order to focus the discussions and obtain relevant information (Turner, 2010).

## **3.2.6 Data Analysis**

There are two main approaches to analysing qualitative data: the inductive and the deductive approach. The inductive approach is often used in cases where very little or nothing is known about the phenomenon of study and hence rely heavily on the actual data to derive the structure of the analysis (Burnard et al., 2008). Deductive approaches are used where the researcher is already aware of the probable responses of the participants and involves using a predetermined framework to analyse the data (Burnard et al., 2008). The research took the deductive approach to data analysis as the framework for data analysis was predetermined.

Data analysis was an iterative process involving the description (interview transcriptions), analysis and interpretation of the data as illustrated in Figure 6 (Biggam, 2008).

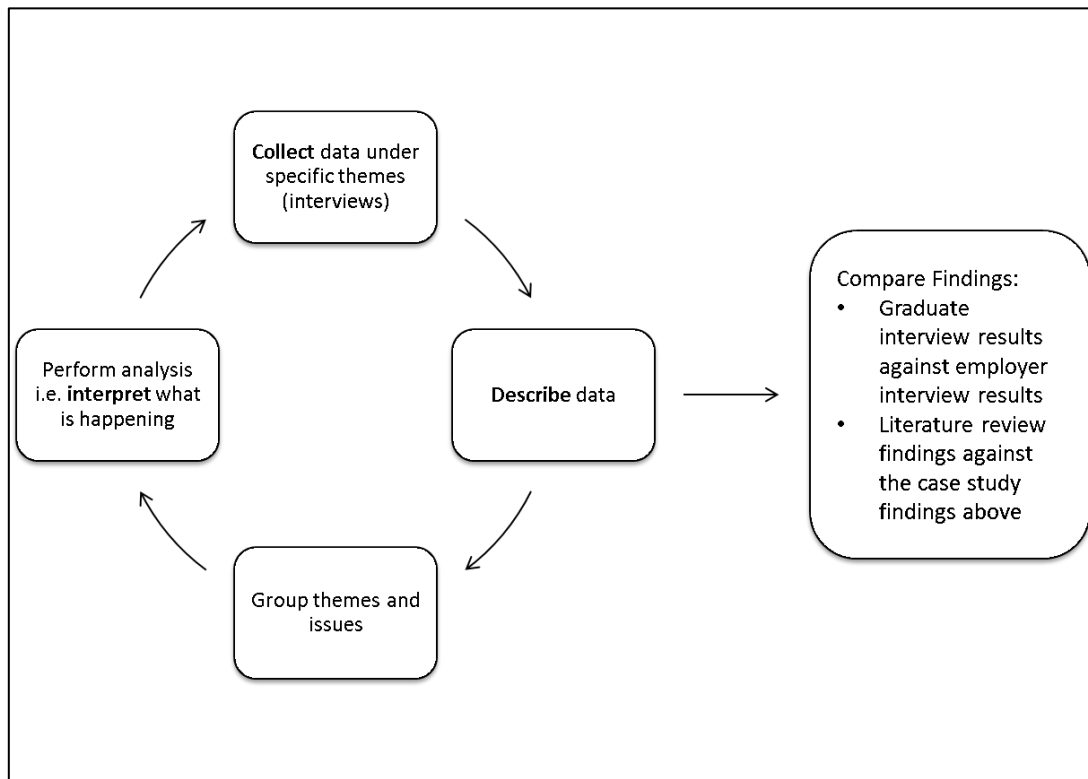


Figure 6: Qualitative Analysis Process adapted from (Biggam, 2008, p. 120)

Although deductive approaches to data analysis are much quicker and less cumbersome than inductive approaches, their lack of flexibility can potentially bias the analysis process due to the fact that the framework has been chosen in advance, therefore greatly restricting the development of themes and theories (Burnard et al., 2008). The unit of analysis and technique for analysis are described next.

### 3.2.6.1 Unit of Analysis

The initial step in determining how to analyse data, is to start by defining the unit of analysis. The unit of analysis refers to “the level of abstraction at which you look for variability” or at which data will be analysed (Guest, Namey, & Mitchell, 2013, p. 26). The unit of analysis in this study is the individual (IS graduates). Due to the data collection methods used in this study (interviews and focus groups), the unit of observation (level at which data is collected)

is the individual and the interactions among individuals within the group (Guest et al., 2013; Massey, 2011).

### **3.2.6.2 Technique for Analysis**

Data emerging from focus groups can be analysed using grounded theory, phenomenological approaches or thematic analysis (Petty et al., 2012). The grounded theory and phenomenology approaches were discussed and evaluated as inappropriate for the research in section 3.2.2. Thematic analysis, which is the most common approach to focus group data analysis, involves searching for common themes emerging from group dynamics (Massey, 2011), and trying to understand the relationships between themes. Vaismoradi, Turunen and Bondas (2013) describe thematic analysis as “a method for identifying, analysing and reporting patterns (themes) within data” (p. 400). Although deductive thematic analysis approaches may start with a theory or framework for data collection and analysis, they are not bound to staying within that theory or framework (Vaismoradi et al., 2013). The deductive thematic analysis technique was chosen for the study as the study focuses on identifying themes centred on employability and based on the conceptual framework proposed in section 2.8. Although qualitative software such as NVivo and Atlas exist, these can be limiting in cases where multiple and varied responses exist (Coady & Berg, 2014). Thus data was physically coded as this is effective with themes and opinions emerging from the data (Coady & Berg, 2014).

To assist in the data analysis process, the conducted interviews were structured into themes (Appendix C) that reflect the employability factors identified in section 2.8 of the literature review. This kind of thematic structure helps avoid the problem of forming one mass of oral text during transcription as opposed to forming categories under pre-determined topics (Biggam, 2008). The interviews were audio-taped and transcribed. Audio-taping interviews enables rich qualitative data to be gathered, grants the interviewer freedom to concentrate during the interview process and ensures everything discussed has been captured (Biggam, 2008). Once the data has been gathered and transcribed, it is recommended that the researcher immerses themselves in the data through reading and re-reading (Vaismoradi et al., 2013). The transcripts obtained from the interviews served as the primary sources of data for the data analysis phase. Although it is common to perform analysis once all the data has been collected, data gathering and analysis was done concurrently in order to increase the depth

and quality of the analysis (Burnard et al., 2008; Vaismoradi et al., 2013) and to be able to inform subsequent data collection in light of emerging findings (Burnard et al., 2008).

The constant comparative method was used to determine data saturation and redundancy. This involved an iterative process of comparing and contrasting the raw data description and analysis with the other themes and literature review findings in order to identify similarities and patterns (Anderson, 2010; Biggam, 2008; Bowen, 2008). Data saturation was characterised by reoccurring patterns and themes in the data which signified the point at which to end the research (Bowen, 2008). The constant comparative approach enabled the researcher to treat the data as one whole as opposed to fragmenting it and to identify emerging themes from the data (Anderson, 2010).

### **3.3 Trustworthiness**

According to Anderson (2010), there needs to be “a way of assessing the extent to which claims are supported by convincing evidence” in qualitative research (p. 2). Trustworthiness in qualitative research poses the question “How can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to?” (Lincoln & Guba, 1985, p. 290).

Although validity and reliability have been traditionally associated with quantitative research, they are increasingly gaining popularity in qualitative research as well (Anderson, 2010; Golafshani, 2003). However, according to Golafshani (2003), the quality of a study should be judged by its own paradigm terms. Therefore, although validity and reliability assess the objectivity and credibility of a study (Golafshani, 2003), the terms credibility, transferability, dependability and confirmability are the essential criteria for testing quality and ensuring trustworthiness in the qualitative paradigm (Lincoln & Guba, 1985). These tests of quality are discussed next.

### **3.3.1 Credibility**

Internal validity is conceptualised as credibility in qualitative research (Lincoln & Guba, 1985). The key question investigated is whether there are any alternative cause(s) that may explain the observations or results obtained (Anderson, 2010). According to Lincoln and Guba (1985), the qualitative researcher must show that they have adequately represented the multiple constructions and that these multiple constructions are “credible to the constructors of the original multiple realities” (p. 296). The following strategies were performed in order to strengthen the credibility of the study: triangulation; member checks and peer reviews; contradictory evidence and the constant comparison method. These are described next.

#### **3.3.1.1 Triangulation**

Triangulation refers to the use of multiple sources of data, methods, data types, and investigators in order to confirm emerging findings (Anderson, 2010; Biggam, 2008; Creswell & Miller, 2010). To ensure triangulation, the research made use of four different sources of data: employed IS graduates, employers of IS graduates, prior research and vacancy recruitment adverts.

#### **3.3.1.2 Member checks and peer reviews**

Member checks involve taking the data and its interpretation back to the participants to verify plausibility of the interpretations (Anderson, 2010; Merriam, 1995). To preserve credibility, the results obtained from the research were re-analysed and compared to results from similar prior research. Moreover, feedback was given to the interviewed participants in order to determine whether the study reflected a true description of what they had conveyed. Peer reviews refer to an evaluation of the research process and data by someone familiar with the phenomenon being studied (Creswell & Miller, 2010). The researcher consulted a number of peers for feedback, advice and guidance throughout the research process.

#### **3.3.1.3 Contradictory evidence and constant comparison method**

According to Anderson (2010), additional techniques for ensuring validity include the use of contradictory evidence and the constant comparison method. These guarantee that researcher bias does not interfere with the researchers' perception of the data (Anderson, 2010). The

research made use of contradictory evidence by initially having themes defined by a conceptual framework which were then tested against the empirical data (Creswell & Miller, 2010). The constant comparative method was used in section 3.2.6.2 to identify similarities and patterns in the data.

### **3.3.2 *Transferability***

External validity is conceptualised as transferability in qualitative research. Transferability in qualitative research refers to the extent in which the findings and conclusions of a study conducted on a sample population can be applied to other settings, populations and contexts (Merriam, 1995). Transferability is one of the major limitations of qualitative studies as they often involve small non-randomly selected samples (Jackson & Verberg, 2007) which cannot be perceived as representative of all similar situations or groups.

To ensure transferability, the researcher provided thick detailed descriptions of the research (context, methodology etc.) so that readers can assess how closely their circumstances match the research context, and hence determine whether findings are transferrable (Creswell & Miller, 2010; Lincoln & Guba, 1985; Merriam, 1995).

### **3.3.3 *Dependability***

Reliability, conceptualised as dependability in qualitative research, refers to how consistent a set of measurements are over time and whether repeated trials of the study would yield the same compatible results (Merriam, 1995). Anderson (2010) describes reliability as the reproducibility of the research findings and the stability of the data. Repeating the study is therefore an excellent way of ensuring reliability, however this is impossible to accomplish given the research time frame. Other strategies to ensure reliability include triangulation and peer reviews which were covered in section 3.3.1.

### **3.3.4 *Confirmability***

Bracketing was performed in order to ensure confirmability. Bracketing involves setting aside one's personal views and biases on a topic by keeping a diary of personal thoughts and

feelings about the topic (Creswell & Miller, 2010; Jackson & Verberg, 2007; Vaismoradi et al., 2013). To accomplish this, the researcher kept notes of their opinions and bias during the research process which helped the researcher to be aware when interpretations of the data reflect personal beliefs rather than those of the participants.

An audit trail was kept by the researcher (Lincoln & Guba, 1985). In an audit trial, the investigator must “describe in detail how data was collected, categories were derived, how decisions were made throughout the inquiry” such that other researchers can replicate the study using the “original report as an operating manual” (Merriam, 1995, p. 56). The research steps should be outlined in detail and the research should be conducted as if someone was watching (Yin, 2003). To accomplish this, the researcher kept notes of their opinions and bias during the research process. Furthermore, the researcher kept a record of the interviews (saved copies), notes, transcripts, the interviewee names, the time and the locations of the interviews (Biggam, 2008). Some of these documents are available in the Appendices whilst others will be provided on request.

### **3.4 Researcher Integrity and Bias**

It is well acknowledged that one of the main problems associated with qualitative studies is that of researcher bias (Boyce & Neale, 2006). Biggam (2008) explains that “It is difficult to see how this [bias] can be avoided completely, but awareness of the problem plus constant self-control can help. Even the simple act of observation is not bias-free: in trying to make sense of what we are looking at we are influenced by own prejudices, experiences, and personal baggage” (p. 100). In order to reduce researcher bias, integrity checks were incorporated into the design process. These checks were covered in section **Error! Reference source not found.** and **Error! Reference source not found.** and included bracketing, obtaining confirmation evidence from several participants and conducting crosschecks with other related research. Moreover, the data collection method (open-ended interviews) used in the study often results in rich thick data, which assists in reducing researcher bias (Turner, 2010).

### **3.5 Ethical Considerations**

All research involving the use of human subjects or informants is required to go through a process of ethical validation. Furthermore, the researcher should provide a description of the process by which ethical approval was obtained (Anderson, 2010). According to Guillemin and Gillam (2004) there are two main dimensions to ethics in qualitative research: procedural ethics and ethics in practice. Procedural ethics involves seeking approval to undertake research involving humans from the relevant ethics committee; ethics in practice involves the everyday ethical issues that a researcher encounters during the course of the study (Guillemin & Gillam, 2004). In order to maintain ethical standards and ensure data integrity, the two main ethical dimensions were addressed.

#### **3.5.1 *Procedural Ethics:***

The researcher applied for and obtained ethics approval from UCT's research ethics committee prior to commencing data collection. The process involved filling in an ethics application form and submitting it together with a copy of the research proposal and interview discussion guide to the Ethics Committee. The principles and guidelines from the Commerce Faculty Ethics in Research Policy and UCT's Code for Research Involving Human Subjects were used to ensure that ethical standards for the institution had been kept.

#### **3.5.2 *Ethics in Practice***

Prior to commencing the interviews, participants were informed of the research both verbally and in the form of a cover letter which can be found in Appendix A. The cover letter provided information regarding the type of information wanted and how this information would be used. Prior to commencing the interviews, participants were informed of the anonymity of their responses, that the interview sessions would be recorded and that their participation in the research was voluntary (King & Horrocks, 2010). A signed informed consent form was obtained from participants that chose to participate in the study.

Participants were requested to provide their personal email addresses on the consent forms to allow for follow-up interviews. With regards to the disclosure of information, participants

were given the freedom to choose what they permitted to be used in the study and what they wanted withheld from the public, including direct quotes and requests not to be recorded. The researcher's email address was given participants after the interviews in order for participants to be able to contact the researcher should the need arise. To ensure privacy for the interviewees, the identity of the individual participants were kept anonymous and the information gathered was only assessable to the researcher. Responses were kept in strict confidentiality and personal data such as demographics were kept separate from the rest of the general responses (recorded data information) on a password protected computer, and backup kept on a password protected file on an external hard drive.

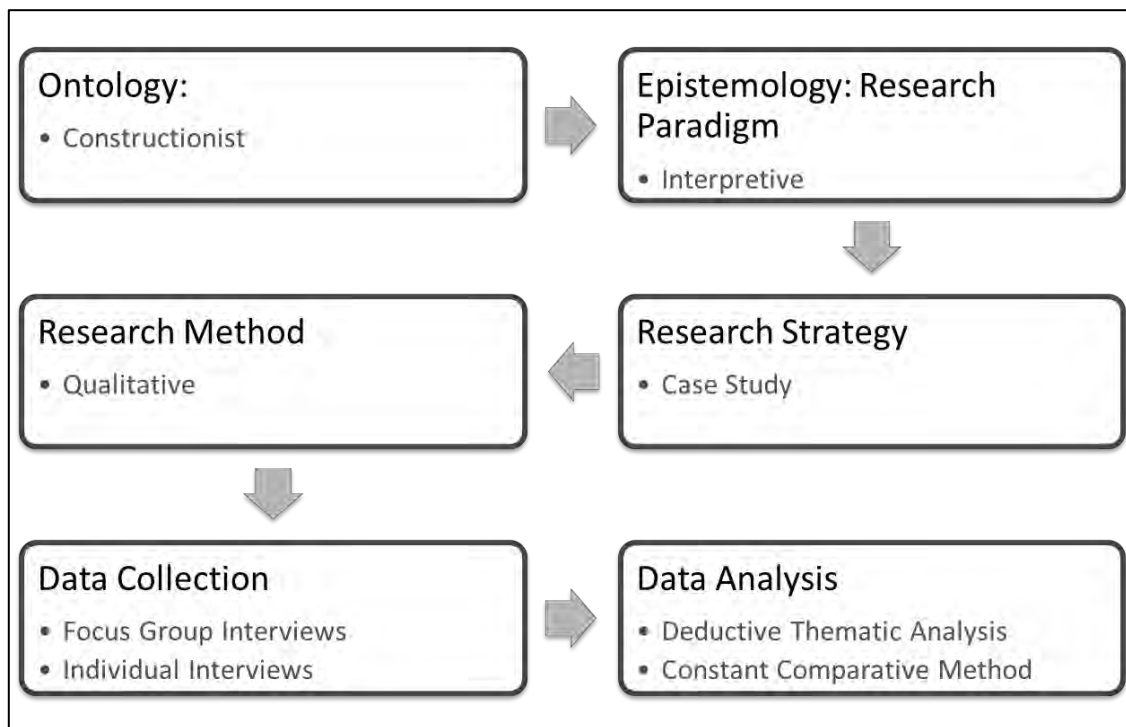
### **3.6 Research Time Frame**

Due to the time-constraints of the study, data had to be collected over a short period of time. As such, the research made use of a cross-sectional time frame. Cross-sectional studies involve analysing a situation at one particular point in time over a limited period to give a snap-shot result (Pavon & Brown, 2010). Sample members or characteristics of the elements are gathered and measured only once over a period of days, weeks or months. In contrast, longitudinal studies involve analysing a situation more than once, with data gathering occurring over a long period of time.

### **3.7 Research Methodology Summary**

In the preceding sections, various methodologies and research instruments best suited to the study were identified. The study was described as exploratory in nature, taking a deductive approach by beginning with a review of the literature, leading to the research questions, followed by the development of a conceptual framework which was covered in preceding chapters. The subsequent stages involved empirically testing the conceptual framework through the collection and analysis of data. The research followed the interpretive research paradigm and was qualitative. Purposeful sampling with diversity was used as the main sampling technique. Data was collected using focus groups and in-depth interviews. Thematic analysis and the constant comparative method were used for data analysis. The research was iterative with previous stages continuously revisited, improved and refined

whenever additional material enhancing the research was found. The research methodology is summarised in Figure 7.



*Figure 7: Research Methodology Summary*

## **4 RESEARCH ANALYSIS, FINDINGS AND DISCUSSION**

One of the greatest and acknowledged supports for any given hypothesis or proposition, is evidence obtained through empirical testing. Starks and Trinidad (2007) state that “readers will judge the trustworthiness of the (analysis) process by how the analyst uses evidence from the interviews to support the main points and whether the building tasks of language converge toward a convincing explanation” (p. 1376). This section therefore discusses the research findings in the context of existing literature. Transcription and quotation information can be found in Appendix H.

The purpose of this study is to identify, explore and analyse individual factors affecting the employability of Information Systems (IS) graduates in Cape Town, South Africa. The research is qualitative in nature. According to Burnard et al., (2008), there are two main ways of writing up findings in qualitative research. The first includes reporting key findings under each theme and providing quotes from the data that support or confirm these findings; this is followed by a separate chapter that discusses these findings in relation to the existing literature (Burnard et al., 2008). The second method is similar but incorporates the discussion into the findings chapter instead (Burnard et al., 2008). The study used the second approach to report on findings. The chapter is divided as follows:

- Participant characteristics
- RQ1: What individual factors affect the employability of IS graduates in Cape Town, South Africa?
- RQ2: Who is responsible for graduate employability in South Africa?
- RQ3: How can employability be embedded into South African curriculums?
- Research findings summary

### **4.1 Participant Characteristics**

According to Anderson (2010), although mathematical rules or probability statistics are not necessary for determining sample size in qualitative research; samples do however, need to be described in terms of their characteristics and relevance to the larger population. Thus, in

order to understand the characteristics of the sample, the profiles of the participants are described prior to discussing the results.

The researcher conducted a total of 8 interviews comprising of 6 focus groups and 2 individual interviews. This resulted in a total of 26 respondents that were interviewed. To avoid contaminating results, data from two of the focus groups were discarded. This was due to one interview having inaudible data and the other not meeting the inclusion criteria specified for the graduates. This resulted in a total of 19 useable results comprising of 15 graduates and 4 employers. Unique pseudonyms were used to differentiate between employer and graduate responses. Thus employer pseudonyms start with the letter E and graduates with the letter G (e.g. Edward for employer, Gill for graduate). The pseudonyms are also gender linked with female participants having female pseudonyms and male participants having male pseudonyms.

#### **4.1.1 *Graduate and Employer Profiles***

The profile of graduate respondents varied in terms of university attended, organisation, job role, position within the organisation, race, gender and age. For the graduates, most of them were employed within the ICT sector (Figure 8) and most were working as either business intelligence consultants or business analysts (Figure 9). All the graduates were working in the private sector.

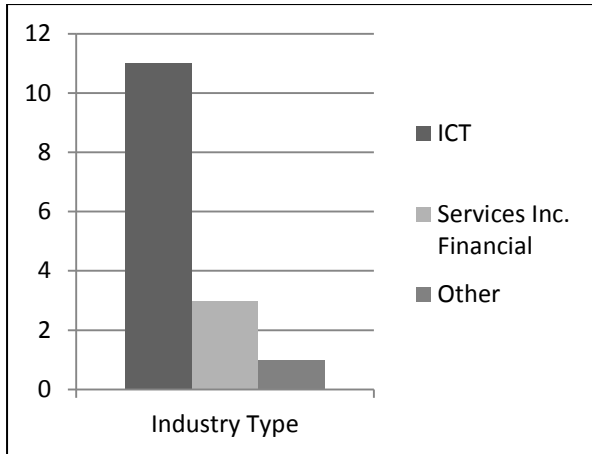


Figure 8: Graduates by Industry Type

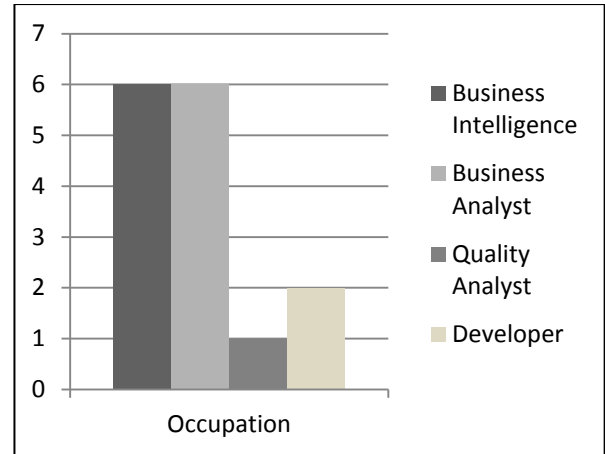


Figure 9: Graduates by Occupation

The highest qualification for a majority of the graduates was an honours degree (Figure 10). Some had a postgraduate diploma whilst others only had bachelor degrees. Most of the graduates were in their second year of work (Figure 11).

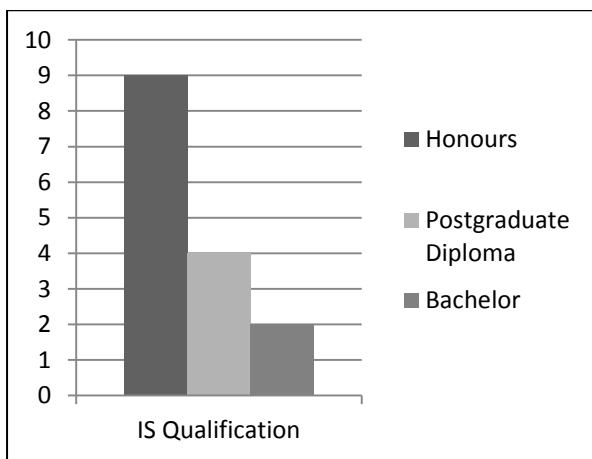


Figure 10: Graduates by Qualification

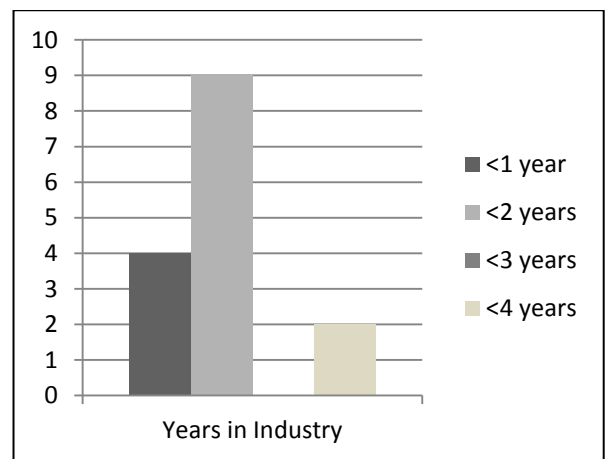


Figure 11: Graduates by Years in Industry

It can be argued that the sample of fundamental importance in a graduate employability study is the graduates themselves. Nevertheless, in order to strengthen the validity of the study and add richness to the data, results from employers were included. The selection criteria for employers required that they had a minimum of 7 years' experience in the IS industry and were directly involved in the graduate recruitment process of their companies. However, obtaining managers to participate in the research proved difficult and thus only a total of 4

employers were successfully interviewed. The employers comprised of a manager, team leader, principal consultant and an HR assistant.

## **4.2 Individual Graduate Employability Factors: Research Question 1**

The section presents findings for research question 1: What individual factors affect the employability of IS graduates in Cape Town, South Africa? The results are presented in themes corresponding to the framework proposed in section 2.8.

### **4.2.1 Career Development Learning**

#### **4.2.1.1 Career management skills have a positive effect on employability**

Results showed that career management skills have a positive effect on employability. Graduates were expected to have good written and communication skills which were gauged through CV's, covering letters and interviews. In interviews, graduates were expected to demonstrate that they had adequate skills for the job and possessed a range of transitional skills including presentation skills, confidence, the ability to learn and the ability to cope under pressure.

*“I think what is fairly critical is obviously whether they have the skills to do the job and the ability to learn ...”* (Erik)

*“We normally ask them to write a covering letter so we analyse their communication skills, if they are able to express themselves, their writing style, if there are any spelling mistakes, so forth.”* (Eleanor)

*“...it was my personality (that made them stand out), during the interview I was very engaging...”* (Gail)

Although students were reported to have good written communication skills, they lacked presentation skills and often failed to market themselves during face-to-face interviews, resulting in lost job opportunities.

*“I have had instances where I have met the person (graduate), [] try to keep in mind that on paper they are excellent, [] on paper I am keen to see them, but I can see this person, that what they are projecting, it doesn't work...”* (Edward)

Graduates therefore need to be taught how to present and market themselves effectively during interviews. These findings illustrate the importance of knowing ones personality, strengths and weaknesses; having good presentation skills; and having good transitional skills (Bridgstock, 2009; Hillage & Pollard, 1998; McQuaid & Lindsay, 2005; Watts, 2006). Similarly Garrido, Sullivan, and Gordon (2010) explain that employers typically expect people who are looking for work to have some formal education and the ability to learn new things. Therefore like Jackson (2013b), these results indicate that career management skills have a positive impact on employment outcomes.

#### **4.2.1.2 Job search skills have a positive effect on employment**

The results show that job search skills have a positive effect on employment. The most common and successful means of job hunting among South African graduates involved networking, attending tertiary institutions career fairs and getting internships that eventually translated into job opportunities. In order to secure jobs, graduates had started the job search process early before graduation.

*“I applied externally, I applied extensively...” (Gertrud)*

*“I was an intern at [organisation] and I applied for a quality analyst position and I got the job.” (Geffrey)*

*“I had the chance to speak to the ex-CEO of a software development company and had the opportunity after working with him to ask him a few questions about where to go after we graduate, and he told us to come straight here and he said we should drop his name and let the guys know that he sent us.” (Gareth)*

These results illustrate the importance of having good job search skills. Moreover, like researchers (Archer & Chetty, 2013; Jackson, 2013b), results show that graduates who start the job search process early before graduation and actively seek work have a better chance of securing employment. While Archer and Chetty (2013) suggest that some graduates fail to secure jobs due to difficulty translating job applications into interviews, in this study it was further found that some graduates failed to present and market themselves effectively during face to face interviews. These results indicate the need for graduates to be taught how to look for jobs, how to market their knowledge and skills in written format, and how to present themselves in interviews.

#### **4.2.1.3 Adaptability and Mobility: Inconclusive Findings**

The results for adaptability and mobility were inconclusive as there was not much information received about this employability factor. Moreover, there was not much evidence to suggest whether adaptability and mobility increased graduates chances of securing employment, or contributed to career progression and success. Therefore a definitive conclusion could not be made based on the current data.

#### **4.2.2 Experience - Work and Life**

##### **4.2.2.1 Work experience has a positive effect on employability**

In this study, like others (Dacre Pool & Sewell, 2007; Jackson, 2013b; Thurairajah & Lees, 2010), it was found that employers valued work experience in graduates and used it to select suitable candidates for employment.

*“...if they have completed an internship at various IT company, that’s always a good sign, [] so that person will also get preference.”* (Eleanor)

*“...work experience is extremely valuable, regardless of the qualification...”* (Edward)

Analogous to Garrido et al. (2010), the interviewed employers highlighted that work experience showed them that the candidate was able to work within a work environment. Like others (Dacre Pool & Sewell, 2007; Little, 2006; Tymon, 2013), graduates with work experience were considered to be more mature as they had likely learned things from that experience that could only be taught in real life situations. It was also reported that graduates who had work experience became productive within an organisation much faster than those without, and therefore did not need as much training as graduates without work experience. Thus companies benefited from not having to spend too much on their training.

*“...and possibly they may have learned things from that experience that you can’t teach, life experience and all that sort of stuff...”* (Edward)

*“...in my experience, with enough work experience, regardless of level of education, they catch up...”* (Ernesto)

Graduate results confirmed employer feedback, with most of the graduate respondents having had work experience prior to obtaining their jobs. These were in the form of internships and various vacation jobs, and varied between degree-specific to non-degree specific jobs. In the case of internships, it was noted that the university played a major role in assisting graduates to obtain these initial employment opportunities. This was accomplished by incorporating practical elements into the curriculum that provided students with opportunities to go into the workplace.

*“...the university gave you the opportunity to go into the workplace ... if I look at the graduates from my old university, about 90% of them are employed and they are all employed at the paces that they got paced in while at university...”* (Genevieve)

*“I think we were lucky because we were part of the program (IS program that provided internship opportunities), so I think that is one of the things that made us to be more employable, because we were interns and then we were kind of swallowed by [company A].”* (Geffrey)

Furthermore, some of the graduates reported having lost job opportunities due to a lack of prior work experience, as illustrated by the quotation below.

*“We always encountered situations, you have got the qualification, but you don’t have enough experience...”* (Gertrud)

Like Tymon (2013), these findings illustrate that employers may decide to hire candidates after they have successfully completed an internship, or candidates may obtain work as a result of contacts developed during their internship. Furthermore the results concur with researchers (Knight & Yorke, 2006; Purdie et al., 2013; Tan & French-Arnold, 2009; Tymon, 2013), who claim that work experience has a positive effect on employability; thus graduates who have obtained sufficient prior work experience have higher chances of securing employment than those with none.

### **4.2.3 Degree Subject Knowledge, Skills and Understanding**

#### **4.2.3.1 Higher qualification levels have a positive effect on employability**

Results showed that employers placed a lot of value on the level of qualification achieved by graduates. Qualification was used as a prerequisite for interviews and graduates that had an

honours degree or higher were preferred and were reported to be more successful in their jobs. These sentiments were supported by findings from graduates with a number of graduates reporting to have struggled to find employment with their initial undergraduate IS degrees. The following extracts illustrate some of these points.

*“...well (qualification)...that is how they would get on a list.”* (Edward)

*“...I graduated with my undergrad and tried to look for a job as a BCom (IS) graduate and I could not find anything, [] but after doing my IS honours, I had people calling me for positions...”* (Gareth)

*“I think there is definitely evidence of those people with honours degree or higher, being more successful in their role.”* (Erik)

These findings concur with a number of researchers (Jackson, 2013b; Thurairajah & Lees, 2010), who state that employers use qualification as the basis for selecting and evaluating potential candidates. Similarly researchers (Dacre Pool & Sewell, 2007; McQuaid & Lindsay, 2005; Taylor et al., 2012), acknowledge that the probability of employment increases with level of qualification. Furthermore, two different South African studies (Archer & Chetty, 2013; Van der Berg & Van Broekhuizen, 2012) reported substantial differences in unemployment rates according to level of education, thus indicating that higher qualifications increased one’s likelihood of securing employment. These findings also support the assumptions of human capital theory and signalling theory which suggest that those with higher educational attainment have higher productivity and attract more employment opportunities than those with basic or no qualifications (Taylor et al., 2012).

#### **4.2.3.3 Degree specific skills have a positive effect on employability**

Academic performance yielded mixed results, with some of the employer respondents reporting to use academic performance to filter graduates for interviews, whilst others did not. Thus a definitive conclusion regarding the role of academic performance in securing jobs could not be made. However, what was emphasised by employers was that graduates needed to be able to demonstrate that they had the relevant skills for the job. During interviews, graduates were evaluated and assessed based on their degree subject knowledge and technical ability. Like Lowden et al. (2011), employers reported to pay particular attention to the

curriculum of the degree in order to assess the relevance, status and credibility of the degree obtained by the candidate.

*“... (we look at) your knowledge about the subject...”* (Ernesto)

*“... (filter on) sort of the education level and the skill set...”*(Edward)

*“...I got feedback, they told me what made me stand out was my ability to solve the case study that we did in the interview...”* (Germaine)

*“...the relevance of the degree is what we after, [] so it’s important to understand the curriculum of the degree...”* (Erik)

Analogous to researchers (Singh & Singh, 2008; Taylor et al., 2012), these findings demonstrate that those with pronounced knowledge and skills in their study domain have higher likelihoods of gaining employment. Furthermore, like McCowan (2014) results show that a lot of key technical skills required by employers are covered by curriculums, indicating that universities are doing as much as they can in terms of the disciplinary knowledge of students. However, results show that aside from SQL, most of the degree specific skills that graduates learned were never used at their work places, thus indicating a gap between the technical skill requirements specified by employers and those used at work. Furthermore, depending on the type of job, as well as the line of work that an organisation is involved in, graduates often ended up specialising in one knowledge area, or working with one particular technology or tool, thus not fully utilising their existing skills and credentials. These findings concur with Tomlinson (2012), who highlights that skills taught at university do not necessarily translate into skills used by graduates at work. The following extracts illustrate some of these points.

*“We actually had a BI module (at university) so there was SQL, we got to use Cognos and Clickview and all those things, [] We touched on a lot of things...”* (Gabriela)

*“Most of what we learned (specific skills) is like on the job, [] SQL is the only hard skill per say that I have done before during varsity and am currently using now on a day to day basis.”* (Gareth)

#### **4.2.3.2 Degree Type (field of study) affects the probability of employment**

One of the key performance indicators of employability is the ability to get a job. Generally, the more employable graduates are, the quicker they are to settle into graduate jobs (Knight & Yorke, 2006). However, according to researchers (Jun & Fan, 2011; Tan & French-Arnold, 2009; Yorke, 2006), the time taken for a graduate to secure a graduate-level job differs among individuals and is oftentimes dependent on the field of study. Lowden et al., (2011) suggested that the demand for graduates within a particular field of study affected graduate employability. Similarly, in this study, degree type (field of study) was found to play a key role in determining ones employability. Some of the graduates had transitioned from non-IS degrees to an IS degree in order to improve their job prospects. These graduates, after having failed to secure jobs with their other degree qualifications, reported an improvement in their job prospects upon completing the IS degree. Furthermore, these graduates reported experiencing a receptiveness in the IT industry that did not exist in their previous industries, thus illustrating the importance of the IS degree in South Africa.

*“...I think that is why the IT industry is being so receptive...”* (Geraldine)

*“...in the last 10 years, IT profession has been a good, certainly had good starting salaries in comparison to other careers ...”* (Erik)

Like researchers (Altman, 2007; Rasool & Botha, 2011; Tan & French-Arnold, 2009), the results indicate that students who invest in subject areas where the demand for those skills is not growing, will most likely struggle to secure jobs after graduation. Within the IS/IT field, employers reported to specifically look for graduates that had gone through the ‘BCom IS stream’, ‘Technikon IT national diploma’, ‘IS IT degree’, ‘IS degree’ and the ‘Computer Science degree’.

#### **4.2.3.4 Qualifications from employer-recognised institutions have a positive effect on employment**

Results indicate that the university attended plays a major role in boosting ones chances of employment. Analogous to Jun and Fan (2011) who stated that some employers opt to recruit from specific institutions in which they have built confidence; in this study, graduates from well recognised universities were preferred by employers and thus had better chances of securing employment.

*“When I review a CV, I first look at the university they attended...”* (Eleanor)

*“...maybe I might be a bit suspicious of someone who’d come from [university C] or in my opinion a less reputable university.”* (Edward)

This finding concurs with Lowden et al., (2011) who suggested that a university’s reputation within a particular field of study has an effect on graduate employability. The results also concur with Stowell and Probert (2013) who found that IS graduates from certain universities tend to have better employment prospects than those from others, despite similarity in courses provided. Therefore, graduates from universities that are not on an employer’s list, or that are lower down in an employer’s hierarchy of universities would most likely be screened out at an early stage of the selection process (Holmes, 2013). This highlights the fact that for an IS degree, more value is now placed on the place of study as opposed to what was studied (Stowell & Probert, 2013).

#### **4.2.4 Generic Skills**

##### **4.2.4.1 Generic skills have a positive effect on employability**

Results showed that due to the lack of work experience among graduates, employers put emphasis on the generic skills and attributes that graduates have to offer. Further compounding the situation is that potential graduates often have to be selected from a homogeneous pool of graduates with very similar qualities in terms of their lack of work experience, their educational background, their qualifications and marks. This concurs with Holmes (2013) and Tomlinson (2012) who explain that graduates will most likely have similar backgrounds and pre-work profiles at the level of education achieved. This leaves very little, other than soft skills and personality to gauge graduates. The following sentiments were shared.

*“...they (graduates) don’t have work experience, so what else do I get (other than personality), you have 4 people with exactly the same qualifications, marks...what else do I get?”* (Edward)

*“For graduates, most of them, they don’t have work experience so we look out for their personality...”* (Eleanor)

It is thus imperative for graduates to possess a range of generic skills. Although there were some differences in the skills suggested between employers and graduates, the results showed that employers and graduates both agreed with regards to the importance of the following set of skills: working and coping under pressure, work ethic, willingness to ask and learn, problem solving, interpersonal skills, communication skills, the ability to express themselves and confidence. The following extracts illustrate some of these skills.

*“...analytical, strong communication skills, interpersonal skills, and computer skills, ability to grasp technology and concepts quickly...”* (Eleanor)

*“...you rather want someone that is humble and willing to learn rather than someone that thinks they know everything...”* (Erik)

*“...the technical skills are very important but you get to understand that you don't know much clearly from our level, so you find yourself having to play the social game a lot of the time, [] so it is a matter of the soft skills for us.”* (Geraldine)

*“...interpersonal skills are quite important, like being able to talk to your team and talk to other people...”* (Gary)

Figure 12 shows the split between skills thought to be important by employers and those by graduates, with the intersection highlighting common skills between the two.

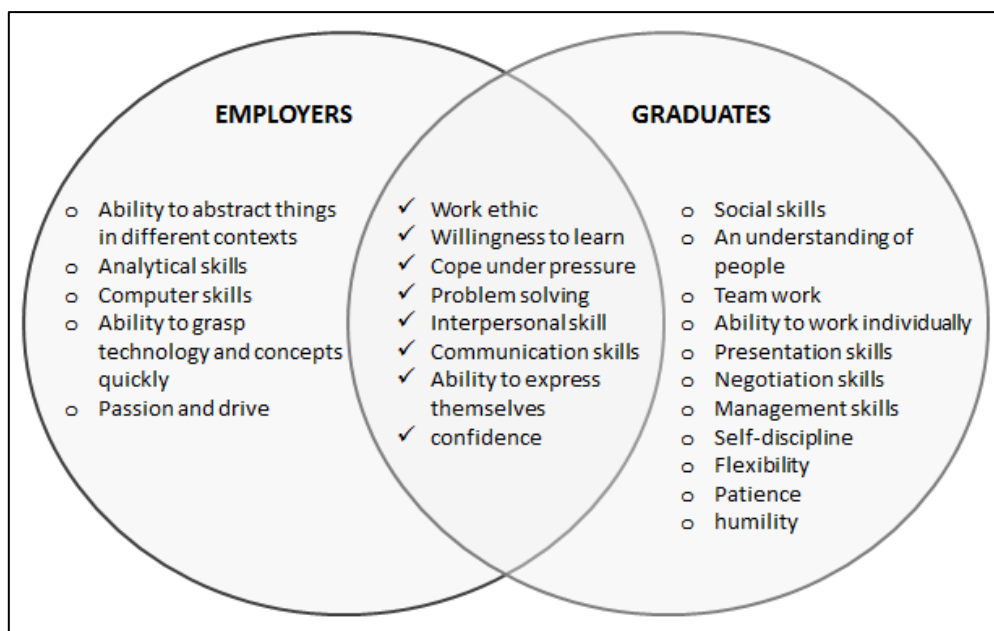


Figure 12: Employer vs Graduates skills

These results bear similarity to the 2013 SAGRA survey where employers rated a willingness to learn, problem solving, interpersonal skills and oral communication skills as very important skills for graduates to have (McCowan, 2014). Like Garrido et al. (2010) and Jackson (2013b), the possession of skills which are not easily substitutable were found to increase one's bargaining power and likelihood of attaining full time employment. Results further align with (Bringula et al., 2016; Carbone & Hamilton, 2016) and show that the kind of generic skills required depended greatly on the role the organisation had in mind for the graduate; developers were required to have stronger technical skills, whereas consultants, business, and client-facing individuals were required to have more soft skills than technical. The university was seen as responsible for equipping graduates with an initial level of generic skills, which was expected to grow and mature at the workplace as one gained experience.

#### **4.2.5 Emotional Intelligence**

##### **4.2.5.1 Emotional intelligence has a positive effect on career progression and success**

Results show that employers expect graduates to be emotionally intelligent, especially once they enter the work environment. However, it was reportedly difficult to gauge one's EI in interviews as this was an attribute that only revealed itself with time. Likewise, graduates stressed the importance of having EI at work, with all of them having encountered situations where they had to manage their own emotions, perceive and manage another person's emotions and use their own emotions to accomplish tasks.

*"...when it comes to having a client shouting on the other side of the phone, I mean [] you can't just go and say ok, fine, if you are shouting I'm going to shout, that won't get you anywhere..." (Gary)*

*"...I think you have to be emotionally mature, you need to be able to separate your emotions from the actual task at hand..." (Gareth)*

*"...you need to find a way somehow to manage yourself and others..." (Gertrud)*

Results showed that EI aided career success, increased ones popularity, increase ones productivity and the productivity of other co-workers.

*“... (EI) critical element to have and typically determines how well you do within an organisation, climbing a corporate ladder among other things...popularity...”* (Erik)

*“...I have found myself forming friendships which I thought would never materialise and my mentors is always saying that, the only reason why your stuff gets done is because you are friends with these people, otherwise your stuff wouldn't get done...”* (Gertrud)

These results concur with researchers (Dacre Pool & Qualter, 2013; Potgieter & Coetzee, 2013) who claim that people with high levels of EI tend to be more successful in their careers. They also concur with Armour (2012) who states that people with high levels of EI have better interpersonal skills. Similarly researchers (Brackett et al., 2011; Potgieter & Coetzee, 2013) and new growth theories (Taylor et al., 2012) claim that those with high levels of EI tend to develop stronger personal relationships and often motivate themselves and others to achieve more, thereby increasing the productivity of those with whom they work. Moreover, a number of South African studies have confirmed the impact of EI on job performance and leadership success (Potgieter & Coetzee, 2013).

Like researchers (Coetzee & Harry, 2014; Dacre Pool & Qualter, 2013; Potgieter & Coetzee, 2013), results show that EI can be taught, and that it develops over time. However, there was not enough evidence to suggest that EI can be successfully taught at higher educational institutions. On the contrary, the data in this study implies that EI skills grow better at the workplace, where individuals are forced to display EI in different situations. This claim was reinforced by graduates, who reported an improvement in their EI skills after having spent time in the work environment.

*“...like with the group stuff (at university), my EI was like very low, [] but at the work place it was different...”* (Geraldine)

*“...it's very different when you doing it (EI) at university level and at the office... [] if you can't learn it (EI) in the workplace then you are not in the proper field...”* (Genevieve)

## **4.2.6 Reflection and Evaluation**

### **4.2.6.1 Reflection and evaluation has a positive effect on career progression and success**

There was not much reported on the reflection and evaluation process that occurs at higher educational institutions. However, the reflection and evaluation process was greatly valued by employers and hence enforced on all employees inclusive of graduates. Employed graduates were required to periodically meet with their line managers in order to discuss and evaluate their performance as well as set new goals. These performance evaluations reportedly pushed graduates into a habit of self-improvement and life-long learning.

*“...we have performance appraisals on a periodic basis, so a mentor or line manager helps with improvement.”* (Erik)

*“...these (performance reviews) force them into that mode of thinking (reflection and evaluation mode) especially if they are done properly and enough time is taken to do them properly...”* (Ernesto)

Graduates reported that the reflection and evaluation process acted like a measuring tool which enabled them to identify areas of improvement. It also gave insight regarding the various career paths that one might wish to take. Moreover, the reflection and evaluation process was reported to be most beneficial when other people got involved in giving feedback. The quotations below illustrate these claims.

*“Well for me when I started here I had a lot of interaction with my line manager, and that gave a lot of insight for areas of improvement and where I was doing wrong, for me that interaction with my manager sort of gave me that measuring tool.”* (Gladys)

*“...and also not just self-reflection, but to receive criticism from an external perspective because most of the time people with plus 5, plus 10 years’ experience in industry can pick up things that you otherwise can’t regardless of how long you spend reflecting on yourself and your own works...”* (Gareth)

*“... (on reflection and evaluation) I think by themselves they might not do the trick.”* (Ernesto)

Like various frameworks that portray students as lifelong learners that engage in reflective processes (Holtzhausen, 2012), reflection and evaluation was seen as a continuous process

that needed to be done often in order to have proper impact. However, periodic performance reviews were reported to lose their significance if conducted too late.

*“...there is a formalised review which happens on like annual, or quarterly, or bi-annual basis, that isn’t actually beneficial, it’s too late... [] if it’s too delayed you miss the context and it waters it down.”* (Edward)

*“...yeah, of course sometimes people just give you that blank you know ‘did well’, ‘very nice’, ‘blah blah blah’, those scenarios do come out especially when reviews are late...”* (Gideon)

Thus like Dacre Pool and Sewell (2007), reflection and evaluation was found to be an important process in one’s self-development. However, most of the reflection spoken about referred to the periodical performance appraisals that organisations imposed on their employees. Not much was said on the reflection and evaluation process at higher education institutes or on individual self-reflection, suggesting that this only occurred when imposed. These findings again concur with Dacre Pool and Sewell (2007) who state that without these opportunities for reflection and evaluation, students were unlikely to fully consider their employability development, and contemplate the necessary steps required to develop it further.

#### **4.2.7 Self-confidence, Self-efficacy, Self-esteem**

##### **4.2.7.1 Self-confidence has a positive effect on employability**

Self-confidence was the most popular of the three attributes; self-efficacy, self-confidence and self-esteem. Employers expected graduates to have some level of self-confidence. Similarly graduates emphasised the importance of having self-confidence at work. People with self-confidence were reported to be taken more seriously and treated with more respect at work.

*“On some level you have to display a lot of self-confidence...”* (Gabriella)

*“...confidence I think in a consulting space, you cannot afford not to have it, [], you have to be confident otherwise how are you going to present an idea to them (clients) or have them buy in, take you seriously...”* (Eleanor)

*“...if you don't have confidence, self-efficacy ...you just going to be bullied around...”*  
(Gary)

These findings indicate that self-confidence has a positive effect on employability. However, unlike Turner (2014) who found that students developed self-confidence during their higher educational studies, there was no evidence in this study to suggest where and how self-confidence was developed.

#### **4.2.7.2 Self-esteem and Self-efficacy: Inconclusive Findings**

Self-esteem and self-efficacy, on the other hand, were not given as much weight and attention as self-confidence. Graduates were reported to be generally insecure and uncertain during their first years of work. Thus employers did not expect graduates to have high levels of self-esteem, as this came with skills and experience. Furthermore, like Archer and Chetty (2013), there was a strong belief that self-efficacy would come with work experience. The extracts below illustrate this.

*“Self-esteem is a tricky one especially with graduates because they are insecure, they are unsure because they lack the skills, experience.”* (Eleanor)

*“I never expect graduates to have a high level of self-efficacy but hopefully the organisation can help raise that level, because when they start they are so nervous...”*  
(Ernesto)

Like self-confidence, there was no evidence to indicate whether a graduate's university studies had contributed to the development of self-esteem and efficacy beliefs. Moreover, there was no evidence to support the link between reflection and evaluation and the development of self-efficacy, self-confidence and self-esteem (Dacre Pool & Sewell, 2007). In addition, there was no evidence to suggest where and how to develop efficacy beliefs in higher educational institutions; nor was self-belief portrayed as intricately wound within the learning discipline (Turner, 2014; Yorke & Knight, 2006).

### **4.3 Graduate Employability Responsibility: Research Question 2**

This section presents findings for research question 2: Who is responsible for graduate employability in South Africa?

#### **4.3.1 *Graduates, academic institutions and industry are individually responsibility for graduate employability***

There were varying opinions regarding graduate employability responsibility. A majority of employers and graduates felt strongly that the primary responsibility lay on the individual and urged individuals to take up responsibility for their own employability. Others however, felt that the responsibility lay on academic institutions and expected academic institutions to provide the resources and opportunities for students to develop work readiness skills. These findings bear similarity to Ashe (2012). Moreover, some of the graduates argued that since they had to financially invest in their schooling, it was only fair that universities guaranteed them employability. The three quotes below demonstrate the various sentiments.

*“...it is up to the individual to build their own passport, to build their own package in which they then now offer to their employers, so it’s up to them to make themselves employable.”* (Gary)

*“Why am I going to the university in the first place if the university is not going to make me ready?”* (Geraldine)

*“As an individual, potential graduate or graduate looking for employment, they should make it (employability) their own business...”* (Erik)

Education systems were urged to be more aligned with industry and curriculums to be geared towards the working environment. However, like Abdullah et al. (2012), it was acknowledged that this was a task that could not be accomplished without the participation of industry. Thus a third group, like Tymon (2013), felt that the responsibility lay more on employers than on tertiary institutions. Organisations were seen as responsible for granting graduates work experience, by taking in graduates that have no work experience and training them. The following quotations illustrate this.

*“...they have a direct responsibility (employability), whoever employed them...”* (Gideon)

*“...organisations as well, I think one of the struggles graduates have is finding employment, [] organisations must be willing to take that risk of taking people who are not necessarily experienced and to train them.”* (Ernesto)

The results show that organisations need to be more accommodating and involved in the education process. However, according to Tymon (2013), employers are becoming more reluctant to invest in the training of employability skills in graduates due to economic pressures and the belief in a lack of commitment from generation Y.

#### ***4.3.2 Graduates, academic institutions and industry are collaboratively responsible for graduate employability***

Like Sirat et al., (2009), some individuals felt that the task of preparing students for work should not be left to educational systems alone, but needs to be a collaborative effort between individuals, universities and industry. The extract below illustrates this.

*“... it is a collaborative effort, [] as a graduate you know some of the responsibility lies on me, but as an institution some of the responsibility lies on you, and I think it would be unfair to take the companies out of the equation...” (Gertrud)*

*“...the company and university can provide an enabling environment, but ultimately the onus is on the individual to learn skills that they think they might need for the direction they want to go.” (Gareth)*

These findings illustrate that graduate employability is a responsibility that needs to be equally shared between graduates, academic institutions and employers, with each having unique individual, as well as collaborative roles to play. Results however differ from the literature (Abdullah et al., 2012; Archer & Chetty, 2013; Lowden et al., 2011; Taylor et al., 2012), mainly in that the role of government and other public bodies were not mentioned. Furthermore, literature reveals that learning experiences outside the university such as family (Casner-Lotto & Barrington, 2006) and previous schooling (Tan & French-Arnold, 2009) also influence graduate capacities. Thus government, parents, as well as the entire educational system inclusive of primary, secondary and post-secondary stages have an important role to play. However none of these were mentioned by respondents. It could be that the role of parents, government and previous schooling was perceived minor in comparison to the roles expected of the individual, academia and industry. Unfortunately there is not enough information to validate this.

## **4.4 Embedding Employability into Curriculums: Research Question 3**

This section presents findings for research question 3: How can employability be embedded into South African curriculums?

### **4.4.1 *Align curriculums to industry needs***

The main theme emphasised throughout the whole interview process was the need for academic institutions to align their curriculums to industry needs. Like Holtzhausen (2012), academic institutions were urged to provide enabling environments for learning and to balance between the soft and hard skills taught. The extracts below demonstrate these sentiments.

*“I think tertiary institutions have a role to play as well, I think their curriculum needs to be geared towards the working environment...”* (Ernesto)

*“...the soft skills, probably that could be something that needs to be emphasised, [] so I think it is a balance, you do need the hard skills because that’s kind of what does the work...”* (Edward)

### **4.4.2 *Use appropriate and effective teaching methods***

According to Jackson (2013b), although it is important to ensure that students have access to appropriate channels for enhancing employability, equally important is ensuring the use of effective teaching methods. One of the graduate respondents recalled having not benefited from a course offered at their institution, aimed at improving students’ communication skills. Moreover, respondents explained that although most generic skills were stressed at university, they were not explicitly stated.

*“I did that course and frankly it did not help much...”* (Gabriela)

*“I think that (generic skills) was something that was stressed without being said...”*  
(Gertrud)

This method of teaching bears similarity to the embedded approach described by Green et al., (2013). According to Green et al., (2013), the embedded approach to teaching has the disadvantage of students not being aware that they are developing employability skills.

Furthermore, Jackson (2013c) states that effective learning requires “a clear understanding of the value of presented material and associated activities, enhanced by constructive alignment with explicit learning outcomes” (p. 3). Thus this indicates the need for universities to ensure that effective methods are used for teaching. Like Marock (2008), higher educational institutions in South Africa are encouraged to include employability skills in their objectives and to explicitly train students on them.

According to Yorke and Knight (2006), students often limit themselves by focusing only on what is offered in their curriculums and do not read around the subject. Graduates respondents however, reported that academic institutions often mislead students into believing that they would make them employable. Thus students believed that getting a degree automatically guaranteed them employment. This ended up impacting on their overall attitude towards self-improvement and learning.

*“...on your 1st day of your university career they tell you ‘oh this is what you are going to get when you are done with your degree’, they don’t tell you that ‘hey the workplace doesn’t always just look for this, they want something more’, [] all they tell you is that the institution is going to give you this and it’s going to make you employable...”* (Genevieve)

*“...if you were to really look at it, the thing that you are taught that is vital in varsities is the ability to learn, so, it’s not necessarily what you learning, it’s if you can learn...”* (Gary)

Thus universities need to be transparent and realistic with students regarding their role in skills development, as this impacted on a student’s attitude towards learning. Universities are urged to encourage students to self-develop, and to explore and learn skills beyond just those taught in the classroom.

#### ***4.4.3 Include experiential learning: Practical elements and internships opportunities as part of the curriculum***

Experiential learning enables students to develop their skills and knowledge from direct experiences outside a traditional academic environment. Academic institutions and companies were urged to collaborate in order to ensure experiential learning was included in

curriculums. Academic institutions were to provide the theory while organisations were to provide the practice. Most of the graduates in this study had taken up internship opportunities at various companies as part of a practical element in their course. These graduates reported that it was this practical element that had enabled them to secure their current jobs. Moreover, these practical elements were reported to expose students to actual work environments and enable them to timeously discover whether they were in the right field or not.

*“I feel if there were some kind of programs where they had exposure to real life work-environments...”* (Edward)

*“I would say the formula is simple: match the theory with some work experience, get the graduate into the workplace as soon as possible...”* (Geraldine)

*“...at the same time how do you create those programs, how do you get companies willing to let people in, those are the challenges.”* (Edward)

However, as illustrated by the last extract, one of the main challenges was finding organisations that were willing to participate in such programs. Thus companies are urged to get involved in assisting universities equip students with the necessarily skills for work. Moreover, companies can offer their support or get involved in different ways, including offering internship opportunities for students, sponsoring programs and offering bursaries to students.

#### **4.4.4 Provide early and proper career guidance counselling services to students**

One of the main issues highlighted by employers, was the lack of knowledge among graduates regarding the opportunities available within the IS degree. According to employer respondents, graduates often completed their IS degrees without a clear understanding of what the IS degree has to offer.

*“...they get to get told you becoming a doctor, you becoming an accountant...but they don't know with the IS degree what potential is out there...”* (Eleanor)

*“...the curriculum in the IS honours degree actually opened my eyes to say BI, specifically, and the broad like horizontal scope of what all is encompassed by IS, I never delved into that in my undergrad degree.”* (Gareth)

These findings are similar to Jacobs and Sewry (2010), who stated that learners were unaware of the potential offerings of IS as a subject choice. However, there was evidence that those with higher education levels had a better understanding of what the IS discipline had to offer. Equally important, work experience and internships reportedly exposed students to the various career options available within IS, thus enabling students to make informed decisions concerning career goals and paths. It was suggested that universities provide proper career-guidance counselling services to students early in their studies, so that they could explore and identify the potential career options available to them and tailor their skills accordingly.

*“...so [university D] offers some support and guidance to their grads so they can actually start developing a career path with a clear understanding of what they want to specialise in ... so I think the university needs to offer the whole career-guidance counselling like [university D]...” (Eleanor)*

## **4.5 Research Findings Summary**

### **4.5.1 Individual Graduate Employability Factors: Research Question 1**

The individual factors that affect the employability of IS graduates in Cape Town, South Africa were found to be CDL, experience (work and life), degree subject knowledge, skills and understanding, generic skills, emotional intelligence, self-confidence and reflection and evaluation. These factors align with most of the individual factors specified in Dacre Pool and Sewell's (2007) CareerEDGE model. However, unlike the CareerEDGE model, self-esteem and self-efficacy were not given as much weight and attention as the other factors; therefore they were not included in the resultant derived model for the research (*Figure 13*). Furthermore, there was no evidence to support the link between reflection and evaluation and the development of self-efficacy, self-confidence and self-esteem (Dacre Pool & Sewell, 2007). These findings are illustrated in *Figure 13*.

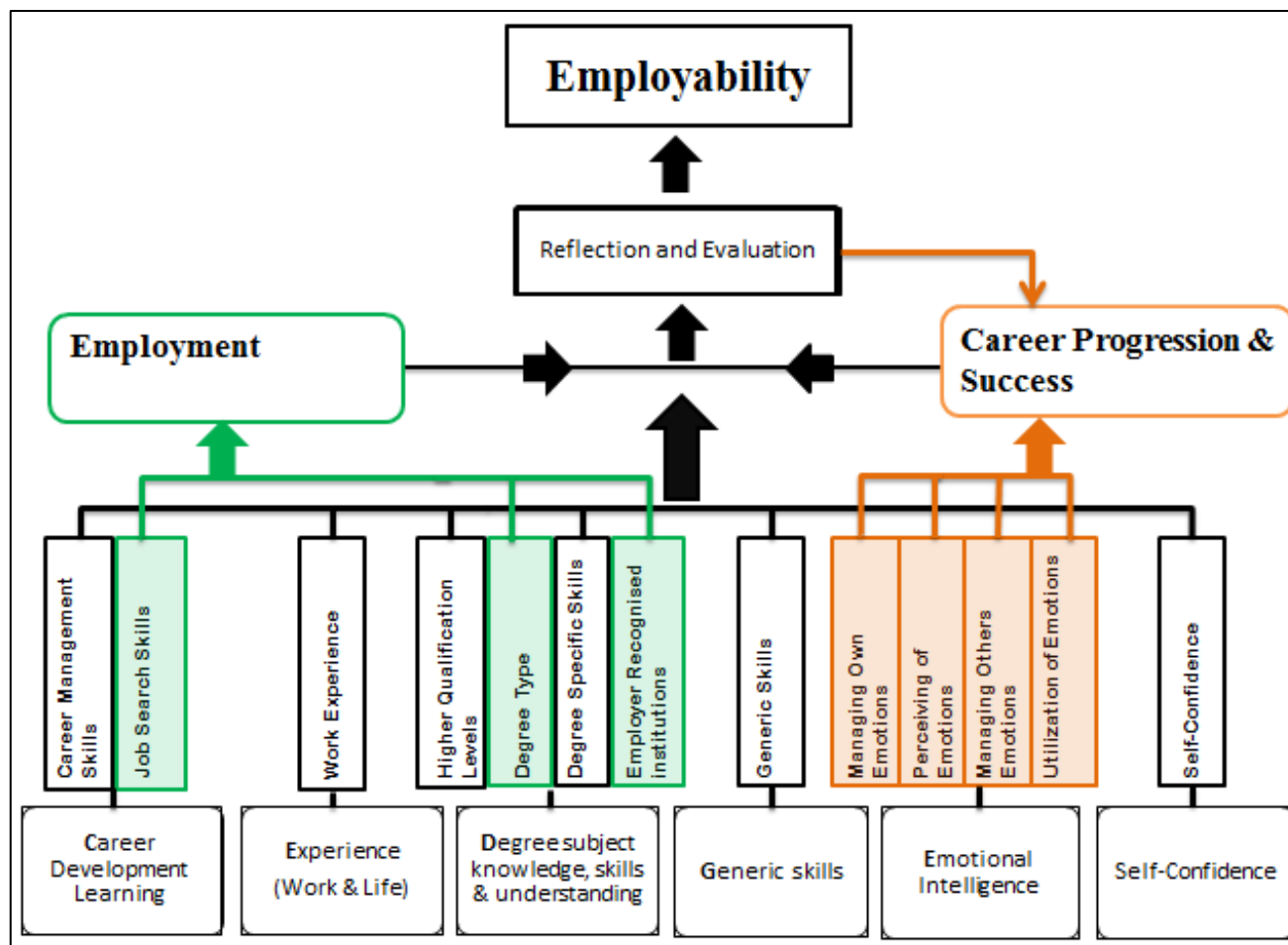
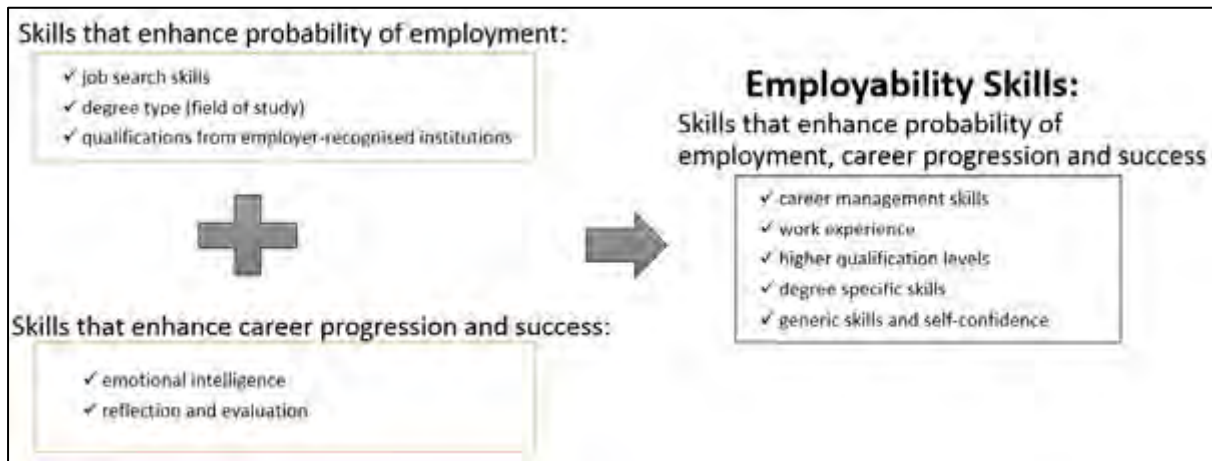


Figure 13: Individual Graduate Employability Factors

(Model derived from the research findings and based on Dacre Pool and Sewell's (2007) CareerEDGE model)

Moreover, results highlighted the split between skills that enhance the probability of employment, skills that enhance career progress and success, and employability skills which are a combination of both (*Figure 14*).



*Figure 14: Employability Skills*

#### **4.5.2 Graduate Employability Responsibility: Research Question 2**

The overall findings illustrate that graduate employability is a responsibility that needs to be equally shared among graduates, academic institutions and employers. Graduates were responsible for taking the initiative to develop the knowledge and skills required for their chosen career paths; industry responsible for helping academic institutions refine and shape graduates, as well as provide graduates with practical opportunities to develop their skills in a work environment; universities were responsible for providing an enabling environment for students to learn and for ensuring that their curriculums catered to the needs of industry. However, there was a degree of overlap and inter-dependence between roles as some responsibilities required the participation of more than one stakeholder: universities cannot align curriculums to industry needs without collaborating with employers in the IT sector (Abdullah et al., 2012); graduates cannot acquire skills and gain work experience without an enabling environment; graduates cannot gain work experience without industries that are willing to take them in and train them. *Figure 15* illustrates these findings.

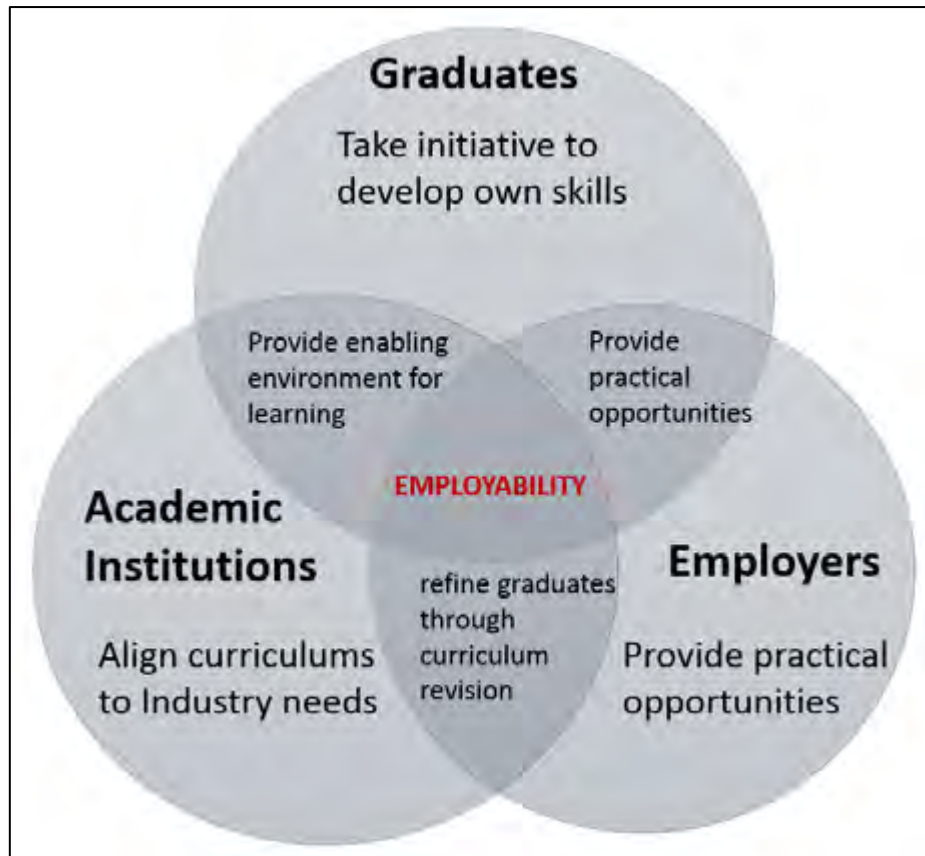
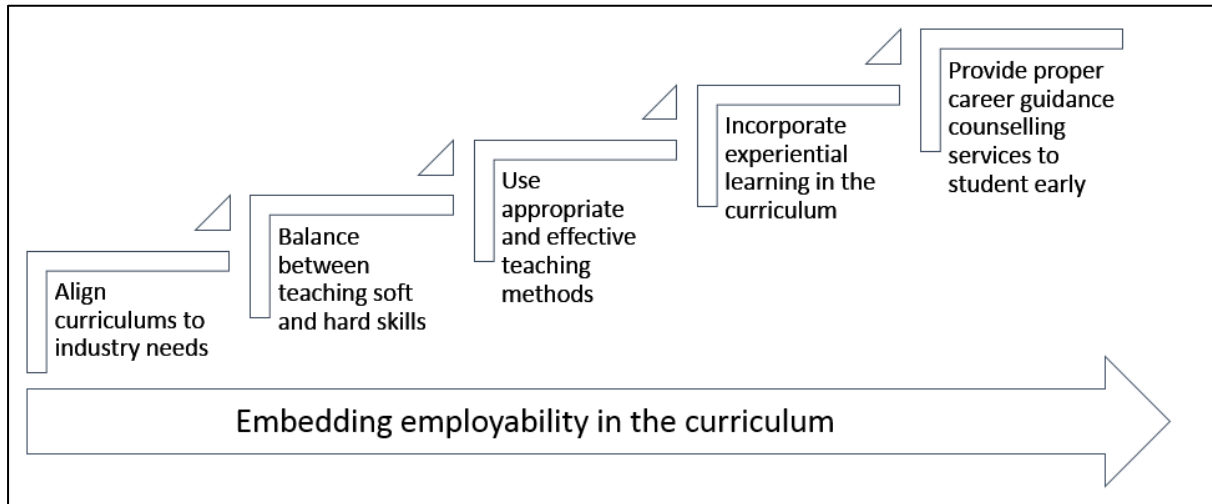


Figure 15: Graduate Employability Responsibility

#### 4.5.3 Embedding Employability into Curriculums: Research Question 3

Results revealed the need for education system to start by aligning their curriculums to industry needs and ensuring that there is a balance between the soft and hard skills that they taught. It was found that certain programs intent on imparting employability skills in students were not effective due to the teaching methods used, thus students ended up not adequately benefiting from these courses. This is an indication for academic institutions to ensure that appropriate and effective teaching methods are being used for learning. Academic institutions were also urged to incorporate experiential learning in their curriculums so that students are given opportunities to develop their skills through real-life experiences such as practical elements and internships. Lastly, respondents stressed the need for academic institutions to provide good career guidance counselling services to students in order for students to be able

to make informed decisions concerning career paths and goals, and be able to tailor their skills in the direction desired. *Figure 16* summarises of these points.



*Figure 16:* Embedding Employability into the Curriculum

## 5 CONCLUSION

The previous chapter presented the research findings and their corresponding discussion. This chapter summarises and concludes the research work. The chapter is structured as follows: Section 5.1 summarises the research based on the research questions and findings; section 5.2 offers recommendations for practice; section 5.3 presents the knowledge contribution; section 5.4 and 5.5 present the research's assumptions and limitations; and section 5.6 concludes the research by offering recommendations for future research.

### 5.1 Summary

The overall purpose of this study was to identify, explore and analyse the range of individual factors affecting the employability of IS graduates in Cape Town, South Africa. The main questions investigated were:

- RQ 1.** What individual factors affect the employability of IS graduates in Cape Town, South Africa?
- RQ 2.** Who is responsible for graduate employability in South Africa?
- RQ 3.** How can employability be embedded into South African curriculums?

The findings are summarised next.

#### **5.1.1 *Individual Graduate Employability Factors: Research Question 1***

The individual factors that affect the employability of IS graduates in Cape Town, South Africa were found to be career development learning, experience (work and life), degree subject knowledge, skills and understanding, generic skills, emotional intelligence, self-confidence and reflection and evaluation.

### **5.1.2 *Graduate Employability Responsibility: Research Question 2***

Graduates, academic institutions and employers were found to be primarily responsible for graduate employability in South Africa. The three entities each had a unique role to play in ensuring graduate employability. However, there was a degree of overlap and inter-dependence between roles as some responsibilities required participation from more than one stakeholder.

### **5.1.3 *Embedding Employability into Curriculums: Research Question 3***

To embed employability into the curriculum, universities are urged to do the following:

1. Align curriculums to industry needs
2. Balance between the soft and hard skills taught
3. Use appropriate and effective methods of teaching
4. Incorporate experiential learning into the curriculum
5. Provide proper career guidance counselling services to students early in their degree studies

## **5.2 Recommendations**

Universities, graduates and employers are encouraged to work closely together in order to ensure that appropriate employability skills are adequately developed in graduates prior to exiting school. Potential graduates should strive to increase and grow their own skill sets in order to become competent at the time of graduating. This will require that they identify their career paths and interests early in order to develop skills in that area. Graduates are encouraged to take the initiative to periodically self-reflect and evaluate their experiences in order to allow for continuous learning and self-improvement, as opposed to waiting until the process is enforced by others.

Universities need to be realistic with students regarding their role in skills development and to encourage students to self-learn new skills as opposed to depending entirely on the

institution to make them employable. One of the main challenges highlighted in the study, was finding organisations willing to participate in the employability of graduates. Industries are urged to get involved in helping academic institutions refine and shape graduates and to provide graduates with opportunities to develop their skills in a work environment

### **5.3 Knowledge contribution**

The research makes a number of contributions: First, it contributes to the existing literature and debate surrounding graduate employability and provides insight into the concept from a South African perspective; Second, it builds on the employability factors and relationships defined by Dacre Pool and Sewell's (2007) CareerEDGE model; Third, it contributes to the existing theories on employability by providing empirical evidence regarding individual graduate employability factors; It also provides recommendations for practice and for improving employability in graduates.

Employability is imperative for many in the corporate world, thus the results of this study may be useful to students and graduates who want to improve their employability and career prospects; employers; career advisors who need to strategically manage student careers; curriculum designers who want to embed employability into their curriculums in order to produce graduates that are employable and well equipped for work; tertiary institutes who want to improve employability outcomes; and policy makers.

### **5.4 Assumptions**

The study focused on employer and graduate opinions regarding individual graduate employability factors. The selection criteria was limited to employers of IS graduates, and employed IS graduates that had obtained their undergraduate or post-graduate IS qualification from a South African HE institute between the period 2010 and 2014. The main objective of the study was to find individual graduate employability factors as opposed to gauging graduate employment. Graduate employability is a complex topic and therefore only

individual factors of employability were considered; external factors of graduate employability (e.g. labour market, government policies etc) were not considered.

## **5.5 Limitations**

As with all other research studies, this research has its limitations. The research was limited in scope and comprised of a small sample of 15 graduates, a majority of which worked in the Western Cape province of South Africa. Thus the findings may not be generalisable and may only be applicable to organisations and higher educational institutions in the Western Cape Province. The research was initially designed to use two sources of data, one from graduates and one from employers. However, due to difficulty securing interviews with employers, only 4 individuals were successfully interviewed from this target group. This is a small sample, and therefore might not be an accurate representation of all employer perspectives.

The lack of a readily available tool or measure of employability lead to the development of interview questions that were largely based on findings from the literature review and the conceptual framework provided in section 2.8. These questions could have solicited perceptions on employability among the respondents, thus resulting in responses that were not reflecting the true feelings and opinions of the individuals. Thus the results should be treated with caution.

Research quality depends greatly on the skill of the researcher and can easily be influenced by the researcher's personal bias. The findings and explanations of the research results were based on the researchers' own analysis, understanding and interpretations of the data. Therefore the researchers' lack of experience could have affected the accuracy of the findings.

## **5.6 Future research**

Directions for future research arising from this study includes replicating the research using a much larger, and extending it to other regions in South Africa. Based on the findings, adaptability and mobility, self-esteem and self-efficacy received little attention and could be the focus of other studies. The research can be replicated using a qualitative, quantitative, or mixed methods approach in order to re-evaluate and expand the framework. The study can be extended to other courses as well, as opposed to IS only.

In conclusion, Ashe (2012) states that “If desirable graduate attributes are defined in relation to an employers’ ‘wish list’ it raises concerns that undergraduate degrees are becoming increasingly reduced to the acquisition of a set of ‘soft’ skills” (p. 131). The researcher therefore stresses the need for caution when addressing employer requirements. Furthermore, like Dacre Pool and Sewell (2007), the study does not depict employability as a process that a student embarks on during their tertiary studies and then graduates with employability for life.

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## 7 APPENDICES

### A. Focus Group Cover Letter

<b>Focus Group Cover Letter</b>	
<p>This research has been approved by the Commerce Faculty Ethics in Research Committee.</p>	
<p>Thank you for choosing to participate in this interview. My name is Flora Kundaeli and I am conducting a study aiming to explore, analyse and establish a set of concepts and relationships associated with graduate employability in South Africa, specifically within the Information Systems profession.</p> <p>The interview should take less than an hour. There are no right or wrong answers and everyone's experience and opinion is important. The interview will be audio-taped in order to ensure that everything discussed is captured as crucial comments may be omitted in the process of writing down notes. Please speak up to ensure that all comments have been captured.</p> <p>Participation in the interview is voluntary and one may withdraw at any given time. You will not be requested to supply any identifiable information, therefore ensuring confidentiality of responses and anonymity for the respondent. Responses will be used for the purposes of this research only and information included in the final report will not identify you as the respondent. The study does not involve any harm (physiological, physical, health) to participants.</p> <p>If there are any further questions regarding this research, please do not hesitate to contact the researcher at <a href="mailto:fkstacey@gmail.com">fkstacey@gmail.com</a>.</p>	
<p><b>Participant Declaration:</b> By signing this document, I hereby declare that I have read and understood the above information, and give my consent to participate in the study.</p> <p>Participant Name: _____</p> <p>Participant Signature: _____ Date _____</p>	

## B. Focus Group Discussion Guide: Demographics

### Discussion Guide

#### PART A: DEMOGRAPHIC INFORMATION

**Industry Group:**

Services including Financial		Manufacturing		Mining		Construction	
Wholesale and Retail		Transport		ICT		Other	

**Occupation/Position in Organisation:** \_\_\_\_\_

**Employed Full Time/Part Time:** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Is there any additional demographic information on yourself or your organisation that you think may be relevant to this study? If yes, please specify:**

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\*I will be analysing the information obtained from all the interviews conducted on graduate employability. I hope to have a draft report in two months' time. Please leave your contact details with me if you would love to receive a copy of the draft to review at that time.

## C. Focus Group Discussion Guide: Interview Guidelines

FOCUS GROUP INTERVIEW GUIDELINE				
PART B: CAREER DEVELOPMENT LEARNING				KEY INFORMATION SOUGHT
<b>Employer Question:</b> <ul style="list-style-type: none"> <li>What are your main means of advertising vacancies and what do you look for when selecting potential candidates for interviews, as well as reaching a decision on whom to employ?</li> </ul>	<b>Employer Probes:</b> <ul style="list-style-type: none"> <li>Various technologies, channels e.g internet, newspapers etc.</li> <li>What makes potential interview/job-offer candidates stand out?</li> </ul>	<b>Graduate Questions:</b> <ul style="list-style-type: none"> <li>How did you hear about your current job and how did you go about the process of looking for, applying for and finally obtaining the position?</li> <li>What do you think made you stand out?</li> </ul>	<b>Graduate Probes:</b> <ul style="list-style-type: none"> <li>Internet/printed media/word-of-mouth?</li> <li>CV, interview skills, personal skills, soft/hard skills etc.</li> </ul>	<b>CAREER MANAGEMENT SKILLS</b> <ul style="list-style-type: none"> <li>Are graduates aware of their strengths, weaknesses, labour market opportunities and are they equipped in terms of presentation skills (CVs, interviews skills etc).</li> </ul> <b>ADAPTABILITY AND MOBILITY</b> <ul style="list-style-type: none"> <li>Are graduates realistic and adaptable to labour market opportunities and developments by showing mobility in seeking work (occupation, location, wage, shift jobs, flexible hours, various jobs) and has their mobility helped them in securing jobs and progressing in their careers.</li> </ul> <b>JOB SEARCH SKILLS</b> <ul style="list-style-type: none"> <li>Are graduates actively seeking work?</li> <li>What are employers using for advertising vacancies and are graduates using similar technologies for job seeking (internet/printed media/word-of-mouth etc).</li> <li>What are employers looking for in graduates and what are their expectations of a graduate?</li> </ul>
PART C: EXPERIENCE (WORK & LIFE)				KEY INFORMATION SOUGHT
<b>Employer Question:</b> <ul style="list-style-type: none"> <li>Does work experience play a role in determining suitable candidates (graduates) for employment within your organisation? Please explain.</li> </ul>	<b>Employer Probe:</b> <ul style="list-style-type: none"> <li>Work experience e.g. internship/work-placements/part-time jobs, vac work etc.? Why?</li> </ul>	<b>Graduate Question:</b> <ul style="list-style-type: none"> <li>Has previous work experience played a role in your securing of employment and helped in your progression at work? Please explain.</li> </ul>	<b>Graduate Probe:</b> <ul style="list-style-type: none"> <li>Internship/work-placements/part-time jobs etc. how have they helped; why have they helped?</li> </ul>	<b>EXPERIENCE</b> <ul style="list-style-type: none"> <li>Do employers value work experience in graduates and if so why; what are its benefits?</li> <li>Are graduates aware of the value of work experience and is it something they have and/or strive to have?</li> </ul>

PART D: DEGREE SUBJECT KNOWLEDGE, SKILLS & UNDERSTANDING				KEY INFORMATION SOUGHT
<b>Employer Questions:</b> <ul style="list-style-type: none"> <li>• What academic skills and attributes do you expect an IS graduate to have?</li> <li>• What role, if any, does level of qualification, degree type and academic performance play in your employee selection criteria? Please explain.</li> </ul>	<b>Employer Probes:</b> <ul style="list-style-type: none"> <li>- SQL, C# ASP.net etc.</li> </ul>	<b>Graduate Question:</b> <ul style="list-style-type: none"> <li>• Please elaborate on your IS education and skills and if/how they have played a role in your current employment and progression at work.</li> </ul>	<b>Graduate Probes:</b> <ul style="list-style-type: none"> <li>- Level of qualification/ degree type/academic performance/University</li> <li>- What skills and attributes do you have as an IS graduate (SQL, C# ASP.net etc.)</li> </ul>	<b>DEGREE SUBJECT KNOWLEDGE, SKILLS &amp; UNDERSTANDING</b> <ul style="list-style-type: none"> <li>• Does level of qualification, degree type, academic performance, degree subject skills, understanding, and university reputation play a role in one's employability?</li> </ul>
PART E: GENERIC/ENTERPRISE SKILLS				KEY INFORMATION SOUGHT
<b>Employer Questions:</b> <ul style="list-style-type: none"> <li>• What should IS Departments be producing (our products - graduates) and what generic/enterprise skills and attributes should IS graduates have?</li> <li>• How would you rank the following skills: <i>Work ethic, problem solving skills, interpersonal or social skills, language and communication skills, management skills and personal skills</i></li> </ul>	<b>Employer Probes:</b> <ul style="list-style-type: none"> <li>- Working under pressure</li> <li>- Problem solving</li> <li>- Teamwork</li> <li>- Communication</li> <li>- Attention to detail and accuracy</li> <li>- Analytical skills...</li> </ul>	<b>Graduate Questions:</b> <p>From your experiences as an IS graduate and employee:</p> <ul style="list-style-type: none"> <li>• What skills and attributes do you have as an IS graduate and which of these do you utilise in your occupation?</li> <li>• How and where were these skills developed (university, internship, at work etc.)? Please explain.</li> <li>• What skills and attributes do you think IS graduates should have?</li> </ul>	<b>Graduate Probes:</b> <ul style="list-style-type: none"> <li>- Working under pressure</li> <li>- Problem solving</li> <li>- Teamwork</li> <li>- Communication</li> <li>- Attention to detail and accuracy</li> <li>- Analytical skills...</li> </ul>	<b>GENERIC/ENTERPRISE SKILLS</b> <ul style="list-style-type: none"> <li>• Are employers interested in generic/soft skills in graduates?</li> <li>• Are employers more interested in generic/soft skills than degree-specific/hard skills?</li> <li>• Do graduates possess a variety of these generic skills and do they demonstrate any work readiness skills?</li> <li>• What role do generic skills play in one's employability (i.e., what role do they at the work place and does having generic skills help one to advance in the work place)?</li> <li>• How where these skills acquired? (can they be taught or are they intrinsic non-malleable attributes)</li> </ul>

PART F: EMOTIONAL INTELLIGENCE				KEY INFORMATION SOUGHT
<b>Employer Question:</b> <ul style="list-style-type: none"> <li>What are your views on emotional intelligence in a career setting and is it one of the traits that you look for in graduates? Please explain.</li> </ul>	<b>Employer Probe:</b> <ul style="list-style-type: none"> <li>How people manage and deal with emotions in the work place? – What is its impact?</li> </ul>	<b>Graduate Question:</b> <ul style="list-style-type: none"> <li>Describe if emotional intelligence played a role in your securing of employment and how it applies to your current profession and your overall progression at work.</li> </ul>	<b>Graduate Probe:</b> <ul style="list-style-type: none"> <li>How do you manage and deal with emotions in the work place? – What is its impact?</li> </ul>	<b>EMOTIONAL INTELLIGENCE</b> <ul style="list-style-type: none"> <li>Are employers looking for emotional intelligence in graduates and do graduates have/demonstrate emotional intelligence (managing own emotions, perceiving emotions, managing others emotions and use of emotions) during interviews as well as at the work place? How has this helped?</li> <li>Is EI something can be taught and does it lead to more productivity (at work- worker productivity, in academics – academic performance etc.).</li> </ul>
PART G: REFLECTION AND EVALUATION				KEY INFORMATION SOUGHT
<b>Employer Question:</b> <ul style="list-style-type: none"> <li>What are your views on reflection and evaluation and does your organisation provide employees opportunities to reflect on and evaluate their work/learning experiences. If so, why? Please explain.</li> </ul>	<b>Employer Probe:</b> <ul style="list-style-type: none"> <li>Performance reviews, Group/Team/ Individual sessions where opportunities for feedback are given.</li> </ul>	<b>Graduate Question:</b> <ul style="list-style-type: none"> <li>Have you often had time to reflect on and evaluate your work and or learning experiences and has this been helpful? Please explain.</li> </ul>	<b>Graduate Probe:</b> <ul style="list-style-type: none"> <li>Exams, tests, self-evaluations etc.</li> </ul>	<b>REFLECTION AND EVALUATION</b> <ul style="list-style-type: none"> <li>Are the claims below true and is Reflection and Evaluation an important part of graduate employability as reflected in the employability model? <ul style="list-style-type: none"> <li>Reflection and Evaluation is said to be key to the development of self-efficacy, self-confidence and self-esteem.</li> <li>People that engage in reflective processes, are said to be self-aware, have regard for others and possess a range of generic skills.</li> </ul> </li> </ul>

H. SELF-EFFICACY, SELF CONFIDENCE & SELF ESTEEM				KEY INFORMATION SOUGHT
<b>Employer Question:</b> <ul style="list-style-type: none"> <li>What are your views on self-efficacy, self-confidence and self-esteem in graduates? Are these traits that you look for in potential employees? Please explain.</li> </ul>	<b>Employer Probe:</b>	<b>Graduate Question:</b> <ul style="list-style-type: none"> <li>Describe if self-efficacy, self-confidence and/or self-esteem played a role in your securing of employment.</li> <li>How do they apply to your current profession?</li> </ul>	<b>Graduate Probe:</b> <p>Self-efficacy a belief in one's ability to organise and execute actions to achieve goals.</p>	<b>SELF-EFFICACY, SELF CONFIDENCE &amp; SELF ESTEEM</b> <ul style="list-style-type: none"> <li>Are self-efficacy, self-confidence and self-esteem important employability attributes?</li> <li>Do employers look for these in graduates?</li> <li>Do graduates have these attributes and are they aware of their significance?</li> <li>Examples of how they have been used in the workplace and how they have contributed/helped one's career progression (securing of job and progression at work)</li> <li>Can these attributes be taught/ learned/ improved?</li> </ul>
PART I: ADDITIONAL INFORMATION				KEY INFORMATION SOUGHT
<b>Employer Questions:</b> <ul style="list-style-type: none"> <li>Who do you think is primarily responsible for instilling workforce readiness (employability) in graduates? Please explain.</li> <li>What can be done to improve the quality of IS graduates? Please explain.</li> </ul>		<b>Graduate Questions:</b> <ul style="list-style-type: none"> <li>Are there any other employability factors that you think played a role in your obtaining a job and progressing within your career?</li> <li>Who do you think is primarily responsible for instilling workforce readiness (employability) in graduates? Please explain.</li> <li>What can be done to improve the quality of IS graduates? Please explain.</li> </ul>		<b>ADDITIONAL INFORMATION</b> <ul style="list-style-type: none"> <li>Who is responsible for instilling workforce readiness (employability) in graduates? Is it the university, industry, parents, government, students themselves, a joint-effort etc.?</li> </ul>
<p>Is there any additional information on yourself, your organisation, or on graduate employability that you think may be relevant to this study? If yes, please explain.</p>				

**THANK YOU FOR YOUR TIME**

I will be analysing the information obtained from all the interviews conducted on graduate employability. I hope to have a draft report in two months' time. Please leave your contact details with me if you would love to receive a copy of the draft to review at that time.

### D. Interview Schedule

Interview No.	Date Of Interview	Candidate Type	No. of Interviewed Candidates	Time	Location – South Africa (Cape Town)
Second Evaluator	08/01/2015 (not an interview but an assessment of questions)	IT Employee	1	1:00pm – 2:00pm	Candidate’s place of work (Feedback used to redefine interview questions)
1 pilot/dry-run	10/01/2015	Graduates	2	11:00am – 12:00pm	Coffee shop (Results not used)
2	12/01/2015	Employer	1	3:00pm – 4:00pm	Candidate’s place of work
3	14/01/2015	Graduates	5	12:30pm – 1:30pm	Candidate’s place of work
4	14/01/2015	Employer	2	2:30pm – 3:30pm	Candidate’s place of work
5	15/01/2015	Graduates	4	3:00pm – 4:00pm	Candidate’s place of work
6	21/01/2015	Graduates	5	1:00pm – 2:00pm	Candidate’s place of work (Results not used)
7	23/01/2015	Employer	1	3:00pm – 4:00pm	Candidate’s place of work
8	23/01/2015	Graduates	6	4:00pm – 5:00pm	Candidate’s place of work
<p>Total No. of Candidates Interviewed: <b>26</b>                      Total No. of Useable results: <b>19</b></p>					

## E. Graduate Demographics

Pseudonyms	Candidate Type	Industry	Occupation	University (IS Qualification)	Years in Industry	Additional information
Edward	Employer	Services including Financial	Software developer Manager (Full-time)	n/a		
Ernesto	Employer	ICT	BI Team Lead (Full-time)			Black Male
Erik	Employer	ICT	Principal Consultant (Full-time)			White, Male, 15 years' experience in IT industry
Eleanor	Employer	ICT	HR Assistant (Full-time)			
Gašper	Graduate	ICT	Business Intelligence Consultant (Full-time)	Honours	<4	
Gareth	Graduate	ICT	Junior Business Intelligence Consultant (Full-time)	Honours	2	
Gary	Graduate	ICT	Business Intelligence Consultant (Full-time)	Honours	2	
Germaine	Graduate	ICT	Business Intelligence Consultant (Full-time)	Honours	<1	Female, coloured
Georgeanna	Graduate	ICT	Graduate Junior Consultant (Full-time)	Honours	<1	African Female, early 20s
Genevieve	Graduate	ICT	Business Analyst (Full-time)	Postgraduate Diploma	<2	
Geraldine	Graduate	Services including Financial	Business Analyst (Full-time)	Postgraduate Diploma	<1	
Gertrud	Graduate	Services including Financial	Junior Business Analyst (Full-time)	Postgraduate Diploma	<2	
Geffrey	Graduate	Services including Financial	Quality Analyst (Full-time)	Postgraduate Diploma	<2	
Geoffrey	Graduate	ICT	Junior Developer (Full-Time)	Bachelor	<2	
Gail	Graduate	Other	Business Analyst Consultant (Full-time)	Honours	<4	
Gabriela	Graduate	ICT	BI Developer (Full-time)	Honours	<2	
Gill	Graduate	ICT	Junior Business Analyst (Full-time)	Honours	<1	
Gladys	Graduate	ICT	Graduate Business Analyst (Full-time)	Honours	<2	
Gideon	Graduate	ICT	Software developer (Full-time)	Bachelor	<2	

## F. Employer vs Graduate skills

Skills Category	Grey indicates a match between Employer and Graduate skills		
	Soft skills/Personality	Employers	Graduates
Work Ethic	Cope under pressure	cope under pressure	working under pressure
	Work ethic	work ethic	work ethic
Problem Solving skills	Willingness to learn and develop themselves	a willingness to learn	willingness to ask and learn
	Problem solving skills	problem solving	problem solving
	ability to abstract things in different contexts	ability to abstract things in different contexts	
	Analytical skills	analytical skills	
Interpersonal or Social skills	interpersonal skills	interpersonal skills	interpersonal skills
	Social skills & EI		social skills
	Team work		an understanding of people
	Working individually		team work
Language and Communication skills	Communication skills	communication skills	communication skills
	Presentation	express themselves	
	Negotiation skills		presentation
Management skills	Management skills		negotiation skills
	Self-discipline		management skills
Personal skills	Confidence	confidence	confidence
	IT skills	concepts quickly	
	Passion and drive	computer skills	
	Flexibility, patience and humility	passion and drive	
			flexibility, patience and humility

## G. Individual Rankings of Generic Skills

Pseudonym	Work ethic	Problem Solving Skills	Interpersonal or Social Skills	Language and communication skills	Management skills	Personal skills
Note: (Ranking from 1-6 with 1 being most important and 6 being least important)						
Edward	1	2	4	3	6	5
Ernesto	2	3	4	4	5	1
Erik	1	3	5	4	6	2
Eleanor	2	1	3	3	4	2
<b>Total</b>	<b>6</b>	<b>9</b>	<b>16</b>	<b>14</b>	<b>21</b>	<b>10</b>
Gašper	1	3	4	2	6	5
Gareth	2	3	4	5	6	1
Gary	1	1	1	1	1	1
Germaine	2	1	1	2	3	1
Georgeanna	1	1	3	1	1	1
Genevieve	2	2	2	3	2	2
Geraldine	2	3	3	3	3	2
Gertrud	2	3	2	3	3	2
Geffrey	2	2	3	1	3	1
Geoffrey	2	1	3	3	4	2
Gail	1	1	1	1	1	1
Gabriela	6	2	4	3	5	1
Gill	2	1	1	1	3	2
Gladys	4	1	3	1	5	2
Gideon	1	1	2	2	2	1
<b>Total</b>	<b>31</b>	<b>26</b>	<b>37</b>	<b>32</b>	<b>48</b>	<b>25</b>

**Calculations:**

Skills Category		Work ethic	Problem Solving Skills	Interpersonal or Social Skills	Language and communication skills	Management skills	Personal skills
<b>Employer</b>	Total Score	6	9	16	14	21	10
	Ranking	<b>1</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>6</b>	<b>3</b>
<b>Graduate</b>	Total Score	31	26	37	32	48	25
	Ranking	<b>3</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>6</b>	<b>1</b>

**Resultant order of Importance:**

Ranking	Employers	Graduates
1	Work ethic	Personal skills
2	Problem Solving Skills	Problem Solving Skills
3	Personal skills	Work ethic
4	Language and communication skills	Language and communication skills
5	Interpersonal or Social Skills	Interpersonal or Social Skills
6	Management skills	Management skills

## H. Transcription and Quotation Information

Ellipses ... have been used to indicate that some words have been omitted from the quotation.

Empty Square brackets [ ] have been used to indicate a pause in speaking.

Square brackets with text inside [*company A*] have been used to indicate a phrase used in place of a company /university/ or person etc. that the candidate mentioned

Round brackets with text inside (*responsibility*) have been used to indicate words that have been added for clarification.