UNIVERSITY OF KWAZULU-NATAL ™
INYUVESI YAKWAZULU-NATALI

AN ANALYSIS OF DEMOGRAPHIC DIFFERENCES IN STUDENT'S PERCEPTIONS OF INTELLIGENCE AT THE UNIVERSITY OF KWAZULU-NATAL, PIETERMARITZBURG CAMPUS

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A thesis submitted in partial fulfilment of the requirements for the degree of Master of Social Science Educational Psychology) in the School of Applied Human Sciences, College of Humanities, University of KwaZulu-Natal.

Declaration

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Social Science (Educational Psychology) in the School of Applied Human Sciences, College of Humanities, University of KwaZulu-Natal.

I, *Sinenhlanhla Khumalo*, declare that:

1. The research reported in this thesis, except where otherwise indicated, is my original research.
2. This thesis has not been submitted for any degree or examination at any other university.
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Sinenhlanhla Khumalo	Dr Phindile L. Mayaba

Acknowledgements

I would like to firstly, thank the Lord Almighty who gave me the will, strength, health, and wisdom to complete this dissertation. Without His provision, I would never have reached this far.

I would also like to express my sincere gratitude to my supervisor, Dr Phindile Mayaba, for her support, guidance, encouragement, insightful comments, and invaluable contribution to this study. Thank you for believing in me Jiyane, may God keep on blessing you.

To the University students, who participated in this study, thank you for the time you devoted in this study, as well as the effort, and knowledge you have vested. This study would not have been possible without your contribution.

To my dearest mother, Lindiwe Shabalala, thank you for your unconditional love, support, motivation, guidance, and encouragement throughout my life as well as my studies. Thank you for the countless sacrifices you have made for me to reach this point. Without your emotional and financial support, this would have only remained a dream. Ngiyabonga Kakhulu Mshengu.

To my uncle, Muzi Shabalala, I express my gratitude for everything that you have done throughout my life. And to my late grandmother, thank you for preaching the value of education and inspiring me to go for my dreams despite challenges. You will always be remembered.

To my dearest son, Awonke, your presence in my life has greatly inspired me to enroll into this master's programme. Thank you for your understanding throughout my studies. I love you.

Lastly, I would also like to express my gratitude to all my friends, and academic colleagues for their unwavering support throughout this journey. I appreciate you all.

Dedication

To my late grandmother, Azlinah, Makhosazana Shabalala, ngiyabonga kakhulu Swazi.

May your soul continue resting in eternal peace.

Abstract

The concept of intelligence has been one of the most studied phenomena over many centuries and its definition remains a mystery and continues to be surrounded by controversy. There are different ways in which intelligence is conceptualized all over the world, however the most dominant is the Western conceptualization and consequently, all the IQ tests that are currently being utilized to measure intelligence are derived/based on this Western conceptualization of intelligence. This is problematic in the South African context where almost all the tests used to measure intelligence are based on Western standards and interpretations of intelligence but applied in South African populations. The purpose of this study was to explore and establish the perceptions of intelligence and whether age differences exist in these perceptions amongst the University of KwaZulu Natal student population. The findings of this study have the potential to contribute to the body of knowledge that exists in the field of psychometrics, particularly cognitive assessments in South Africa, and can provide valuable insight for theorists and academics in the field who may want to develop a contextually relevant theory of intelligence. A semi structured focus group interview schedule was conducted with 11 participants. The findings of the study established perceptions of intelligence, revealed that demographic differences in students' perceptions of intelligence do exist, and there are various reasons as to why these exist which are also ultimately the factors that shape the student's perception of intelligence. Moreover, younger students at the undergraduate level of study generally perceive intelligence using the lenses of the multiple intelligences' theory while older students at the postgraduate level of study perceive intelligence in both cognitive and social constructionism lenses. The study has revealed that there is a need for additional research to build a solid body of knowledge and create a clear understanding of how students in the larger South African community perceive and construct the concept of intelligence.

Iqoqa

Umqondo wobuhlakani ubungezinye zezinto ezifundwe kakhulu emakhulwini amaningi eminyaka futhi incazelo yawo ihlala iyimfihlakalo futhi iyaqhubeka nokuzungezwa yimpikiswano. Kunezindlela ezahlukahlukene zokucabanga kobuhlakani emhlabeni wonke, kepha okubaluleke kakhulu ukucabanga kwaseNtshonalanga. Inhloso yalolu cwaningo kwakuwukuhlola nokusungula imibono yezobunhloli nokuthi ngabe umehluko weminyaka ukhona kule mibono phakathi kwenani labafundi baseNyuvesi yaKwaZulu Natali. Okutholakele kulolu cwaningo kufanele kube nomthelela emkhakheni wolwazi okhona emkhakheni we-psychometrics, ikakhulukazi ukuhlolwa kokuqonda eNingizimu Afrika, futhi kusize izifundiswa kanye nezifundiswa kulo mkhakha ekwakheni umbono ofanele wobunhloli. Uhlelo lwenhlolokhono yeqembu lokugxila oluhlelekile lwenziwa nabahlanganyeli abayi-12. Okutholwe yilokho kuveze ukuthi umehluko weminyaka ngemibono yabafundi yezobunhloli ukhona, futhi kunezizathu ezahlukahlukene zokuthi kungani lezi zikhona futhi okuyizinto ekugcineni ezibumba umbono womfundi wezobunhloli. Ngaphezu kwalokho, abafundi abasebasha ngokuvamile babona ubuhlakani besebenzisa amalensi wethiyori emiingi yokuqonda ngenkathi abafundi asebekhulile bebona ubuhlakani kumalensi okwakhiwa komphakathi. Ucwaningo luveze ukuthi kunesidingo sokwenza ucwaningo olwengeziwe ukwakha umkhakha wolwazi oqinile nokwakha ukuqonda okucacile kokuthi abafundi emphakathini omkhulu waseNingizimu Afrika babona futhi bawakha kanjani umqondo wezobunhloli.

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Abbreviations

APA – American Psychological Association

EQ – Emotional Intelligence

MI – Multiple Intelligences

MKO -More Knowledgeable Other

IQ -Intelligence Quotient

SA – South Africa

UKZN – University of KwaZulu Natal

USA – United States of America

REC -Research Ethics Committee

WISC IV – Weschler Intelligence Scale for Children Fourth Edition

WAIS IV – Weschler Adult Intelligence Scale Fourth Edition

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CHAPTER 1: INTRODUCTION

1.1 Background and context of the study

The concept of intelligence has been one of the most studied phenomena over many centuries and its definition remains a mystery and continues to be surrounded by controversy. This may be because the way individuals perceive, define and measure intelligence varies according to culture, context, gender, language, beliefs, and race as argued by previous scholars (Furnham, 2001; Sternberg, 2000). The controversy and arguments pertaining to what constitutes intelligence are numerous, however, the most common conceptualizations all pertain to the idea related to the multiple intelligences and the general factor of intelligence theories. The focus of this current study is the exploration of students' perceptions of intelligence, what shapes these perceptions and to establish whether demographic differences in these perceptions exist. These can be described as conceptions that reside within the mind of individuals and have been coined as implicit theories that guide their thought patterns and behavior.

This study is inspired by the trends and recommendations that were made in previous studies that explored the concept of intelligence. Some of the previous findings included that the concept of intelligence is mainly understood in the same lenses as those of Western people, and this was found to be problematic in various ways (Sternberg & Grigorenko,2004; Furnham, 2000) which will be discussed in this chapter. It has been a trend historically, for intelligence to be defined as the ability to achieve academically, that is, to perform well in linguistics, science, mathematics, and in other school-based subjects or disciplines (Sternberg, 2000).

Recently, there has been a shift in how intelligence is understood, and this has been seen to include creative and leadership abilities (Furnham, 2016). This shift demonstrates that people have begun understanding that intelligence takes different forms depending on the requirements of the environment, culture, and context one finds them in. Thus, it becomes increasingly problematic for African psychologists to continue utilizing intelligence test materials that have been developed in Western countries. This is because these are often based on Western perceptions and concepts of intelligence, which are influenced by the Western culture, experience, environment, and overall context that is worlds apart from us as Africans. Even more so because measuring people's intelligence through the process of psychoeducational assessments has become common practice in South Africa over recent years, due to the growing demands as noted in (Gaydon, 2019) and the outcome of these tests often has significant life -changing impact on the individual being tested.

Studying lay theories of intelligence in Africa, which can be described as the informal, common -sense explanations people give to understand abstract concepts such as intelligence; has the potential to suggest new research avenues, shed light on how Africans commonly understand intelligence, and highlight other aspects of intelligence that have been previously ignored in existing theories. It can be a way of challenging the conventional Western ideas about intelligence, and most importantly it may be directly useful in paving a way for theory and test developers in Africa to develop intelligence tests and other assessment materials that will encompass how Africans understand intelligence; and be congruent with local belief systems that tend to be more relevant and have better contextual fit. The discipline of psychology, particularly psychological assessments; stands to benefit

greatly if alternative views of human abilities such as intelligence, are developed and encouraged to augment the current narrow perspectives.

This has significant relevance in South Africa, a diverse country, with people from different racial, cultural, economic background and where more than 11 official languages are spoken, unlike in Western countries where many of the IQ tests are developed. For example, let's look at the widely used Weschler Adult Intelligence Scale- Fourth Edition (WAIS-IV) and Weschler Intelligence Scale for Children (WISC -IV) tests (Weschler, 2008), which although may have been adapted and standardized for South Africans, remains highly biased due to language, cultural biases as well as the fact that the current quality of education in South Africa vastly differs from that of Western education (Foxcroft, 2004). Furthermore, although there are a few IQ tests that have been developed in South Africa for the South African population such as the South African Individual Scale-Revised (SSAIS-R), these are highly outdated, obsolete, Eurocentric, and irrelevant for the children growing up in the 21st century.

Many researchers have studied lay people's perceptions of intelligence and in particular, Byrne (1994) studied and found that there are gender differences that exist in the perceptions of intelligence. Since the African culture is perceived to be very diverse, conceptions and perceptions of this phenomenon are expected to be just as diverse. Various studies that were conducted by (Furnham,2000; Petrives and Furnham, 2000; Furnham, 2016) have indicated that it is very important to continue studying intelligence and its perceptions across different contexts as these have the potential to shape and direct thinking and behavior that can gear towards social and educational implications.

1.2 Problem Statement & Motivation of the Study

As discussed above, there are different ways in which intelligence is conceptualized all over the world, however the most dominant is the Western conceptualization. Due to this dominance, it ultimately gets imposed on different countries including Eastern, Asian, and African countries. Consequently, this eventually proposes challenges to the field as we then use these Western theories to make conclusions and decisions about the intelligence of Africans. It is thus problematic for us Africans to rely on Western conceptions of what intelligence is, and further use these theories to rule our practice and therefore it is of profound importance for researchers, academics and professional in the field of psychology, particularly psychometrics, to study this phenomenon even further and have a deeper understanding of it, as relevant and experienced in our own unique context as South Africans living in a diverse, multi-cultural, environment because this will greatly inform and benefit the field and our practice as psychological practitioners.

Furthermore, it is not only important for us to understand how South Africans study and conceptualize intelligence, however it can become even more important to understand how South Africans, particularly those who are young and educated, have experienced intelligence in their journey to adulthood; how their understanding has shifted over time, what has influenced the shift, and whether any demographic variables have any effect therein. This will then afford us the opportunity to gain a more holistic understanding of this phenomenon and what impacts implicit theories around it, consequently this will provide critical and significant data to test developers in South Africa and will significantly decrease the potential of any biases, and thus make future tests more relevant, culture-sensitive, reliable, valid, and applicable to future test users. Optimistically the findings of this study

have the potential to contribute significantly to the field of psychological assessment, which certain institutions and organizations rely on in the process of selection, recruitment, and promotion of their employees to certain positions as noted in (Pick, 2016). This is beneficial to the sample since they are future jobseekers and employees.

1.3 Research Objectives & Research Questions

The following were the research objectives of this study:

- To establish students' perceptions of intelligence
- To establish/explore what shapes the student's perceptions of intelligence
- To establish/explore the demographic differences in student's perceptions of intelligence and the reasons thereof

The study was guided by the following research questions:

- What are the students' perceptions of intelligence?
- To explore the reasons for these differences in students' perceptions of intelligence and what shapes them?
- Are there any demographic differences in student's perceptions of intelligence?

1.4 Introduction to Methodology

For the purpose of this study, and to provide responses to the research questions above, a qualitative, interpretive research design was employed as it it produces in-depth data

that is based on lived human experiences and allows for a naturalistic approach to the world. Social constructionism was used as a theoretical framework guiding the study as it denies the existence of an objective reality and asserts that realities are social constructions of the mind, and that there are as much constructions as there are individuals (Galbin,2014).

Purposive and convenience sampling methods were used by means of recruiting 11 participants between the ages of 18-29 from the University of KwaZulu-Natal (UKZN), Pietermaritzburg campus. Focus group discussions were used to collect data from the participants and followed an interview schedule with semi-structured questions.

Thematic analysis, a method of analyzing data which incorporates categorizing verbal, and behavioral data for the purpose of classification, summarizing, and tabulation in order to make sense of the data that is collected was utilized in this study. Chapter 3 of this dissertation is dedicated to further discussing the methodology that was undertaken in this study.

1.5 Delimitation of scope

The scope of this study was limited to the University of KwaZulu Natal (UKZN) undergraduate and postgraduate students between the ages of 18 – 28. These participants reside in Pietermaritzburg, KwaZulu Natal province. They were enrolled in various educational courses within the University and came from different racial, cultural, ethnic, and economic backgrounds. This study is thus limited to UKZN students and to certain variables of intelligence, and thus does not represent the entire student population. Furthermore, the study was limited to a sample size of 11 UKZN students due to logistical reasons and thus cannot be generalized.

1.6 Operational definition of terms

1.6.1.1.1 Culture: Culture is a set of values, beliefs, way of thinking, characteristics, and a cluster of learned behaviours that is shared by a particular group of people (Lebron, 2013).

1.6.1.1.2 Intelligence: Intelligence, across many cultures, is understood as the ability to think, to learn from experience, solve problems, and to use knowledge to adapt to new situations (Das, 2004). It is not merely book learning, a narrow academic skill, or test-taking smartness (Parankimalil, 2014).

1.6.1.1.3 Perception: An understanding of the world that is constructed from information obtained by means of our senses (sight, hearing, touch) which then make our experience (Kusluvan & Kusluvan, 2000).

1.6.1.1.4 Students: A student is a person who is a scholar, attends school, college, or university, and seeks knowledge from more knowledgeable others such as college professors (Liao, 2013).

1.7 Chapter Outline

This chapter briefly introduced and discussed the background and the problem that prompted the need for this study to be undertaken. It then discussed the rationale behind this study and outlined the study's objectives as well as research questions that will guide it. Furthermore, it briefly introduced the methodology that was employed in this present study,

the research design and the research paradigm that was used in this study. Lastly, it also presented the scope of delimitation as well as defined key terms used in this study.

The second chapter, which follows, presents the relevant and available body of knowledge that exists in the study of intelligence, that is, theoretical and implicit understandings. Thereafter, the third chapter further discuss the methodology that was employed in this study, the research design as well as the research paradigm. This will then be followed by a detailed description of the process that was utilized to recruit the participants and the method of data collection. Moreover, this chapter discusses the method and process that was followed in the analysis of the data as well as the ethical considerations that guided this dissertation.

The fourth chapter will then present the findings and the overarching themes that were highlighted during the process of data analysis as well as further discuss these findings as related to the research questions highlighted in this chapter. The concluding remarks of this study, the implications, limitations and as well as the recommendations for future studies based on the findings will be discussed in this fifth chapter. Finally, the American Psychological Association (APA) referencing style 7th edition that was utilized across this study, will then be listed in the sixth and last chapter of the dissertation.

1.8 Conclusion

This present chapter has outlined and discussed the problem statement and highlighted the importance of studying and understanding how Black people, particularly South Africans conceptualize the concept of intelligence as this will pave a way for

academics and researchers in the field to coin African theories that are contextually relevant theories following the empirical evidence that studies such as these, can provide. The next chapter will discuss the literature currently available.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter introduces and explores the phenomenon that serves as the foundation of the present study, which is intelligence. It has several sections that delve into different aspects of how intelligence is perceived by laypersons, particularly students from different contexts around the world. This chapter attempts to outline some of the theories of intelligence that are available presently in the literature that inform how individuals perceive and understand intelligence.

The first section focuses explicitly on defining the concept of intelligence in general terms. Thereafter, it is followed by a section that looks at the different theories of intelligence that had been found relevant for this study. The next section looks at the different perspectives/ types of intelligence; followed by characteristics if intelligence. Thereafter there will be a section that explains how various culture's view intelligence differently from each other. Thereafter, literature focuses on different factors that influence student's perception of intelligence around the world. This then leads to the next section which focuses on the age differences in the perception of intelligence. The last section focuses on social constructionism, which is the adopted theoretical framework for this present study. All the above sections are based on the research objectives and questions, and in overall this chapter attempts to shed some light on them.

2.2 Defining Intelligence

In a traditional outlook, dating back to the days of Alfred Binet in the early 1900s, intelligence was regarded as a concrete entity, the power of the mind. In the same vein, Eysenck (1979) conceptualized intelligence as a biological phenomenon. He proposed that

the brain comprises many pieces and processes that essentially work as a unit. According to him, intelligence is therefore a function of how efficiently that unit processes information daily. He then argued that intelligence is primarily a biological function. He went on to say that it is not a fixed entity, but rather it changes in many ways over an individual's life span and the intelligence of one's parents influences it. On the other hand, Sternberg (1983) proposed that intelligence is a cultural concept that cannot be defined outside of cultural beliefs, and therefore will differ from one context to the next. The term intelligence is one that surfaces many contradictory definitions. One group believes intelligence is made up of one entity while the other group argues that it is made up of many entities or abilities. Many theorists over the years have attempted to define intelligence but there has not been one theory that seems to capture it perfectly. This implies that there is no blanket approach to defining intelligence, and Sternberg (1983) agreed with this statement when he said there is no one way of defining intelligence.

Interestingly, even with the development of Intelligence quotient (IQ) measurement tools which are increasingly used in South Africa, the concept of intelligence remains a mystery, and yet the IQ tests has emerged as by far the best tool measure it. This then begs the question of "what definition or theory of intelligence informs these IQ tests that are being used all over the world to shape what happens in people's lives?". The Western perspective of intelligence is the one being used as a blanket approach, which is problematic, as documented by Foxcroft (2004).

Intelligence, all over the world and in various cultures, is understood as the capacity to think, solve problems using knowledge gained through different experiences and the

ability to adapt to new and unfamiliar situations (Forsythe, 2019). Today, laypersons, from different contexts believe that intelligence is basically an ability to think, understand, and apply that information to how individuals live their lives (Mokoena, 2013). Below is an outline of some of the different intelligence theories that have emerged over the years from different contexts.

2.3 Theoretical perspectives of intelligence

2.3.1 *Sternberg's triarchic theory*

The triarchic theory of intelligence defines intelligence in terms of the ability to achieve success in life based on the individual's personal standards and within one's sociocultural context. According to Robert Sternberg, the author of this theory, there is a common set of universal mental processes underlying intelligence aspects. According to Forsythe (2019) Sternberg believed that there were many factors, which can also be individually measured, that produced human intelligence, and in an attempt to understand and prove this he came up with the Triarchic Theory of Intelligence.

In this theory, he highlighted that human intelligence emerged because of an individual successfully adapting to the environment they reside in despite challenges. Contrary to the traditional theories that were already developed at the time, his theory further emphasized that being creative was somewhat linked to human intelligence, which became one of his theory's major key points. He then investigated several characteristics and parts of the human experience that could impact an individual's intelligence and collated these in the Triarchic theory of intelligence. There are three aspects, and these include the contextual, componential, and experiential aspects of intelligence.

Contextual intelligence (which others refer to as practical intelligence) comprises the ability to grasp, understand, and handle tasks daily. This aspect generally reflects how an individual relates to their external world. Practical intelligence typically operates in the real world, and it allows one to adapt and shape their environment (Sternberg, 1985). In the South African language, it is usually referred to as being “street smart”.

Componential intelligence on the other hand, is associated with the ability to solve problems and compute solutions. Sternberg (1985) asserts this type of intelligence can be shown or proven by an individual’s ability to analyze and judge different situations accordingly. Moreover, it is the ability to solve problems and understand knowledge and it is more commonly referred to as academic intelligence. Sternberg believed that this reflects how one relates to his inner world.

Lastly, experiential/creative intelligence is associated with the ability to be creative in providing solutions to various kinds of problems. It is marked by inventing or imagining a solution to a problem or situation. Creativity in this sense can involve anything from discovering an innovative idea or solution to problems that were unforeseen to articulating beautiful artwork.

2.3.2 *Vygotsky and intelligence*

The Russian psychologist Lev Vygotsky argued that all intellectual abilities were societal in origin. The model of social cognition presents the idea that culture is a key factor that determines how people and groups at large develop over time, since human beings

remain the only group of species that invented what we call culture today and as a result, their development largely revolves around culture (Vannini & Williams, 2009). Consequently, this means the way a child learns and develops is significantly influenced by the culture in which they belong, which is usually that of the family they reside and interact with on a consistent basis. Lev Vygotsky primarily defined intelligence as the capacity of an individual to learn from instruction. This instruction could be from a more knowledgeable other (MKO) which can range from a teacher, parent, community elder etc. On the other hand, he also believed that the human mind is not a complex set of general capacities as writers like Jean Piaget proposed, rather it was a set of specific capabilities. He referred to these specific capabilities as the higher mental functions of an individual, including speech (language), mathematics, and writing.

Furthermore, he proposed that all these abilities were not universal but rather, were culture specific. To put it simply, Vygotsky believed that an intelligent individual is one that displays high levels of these abilities, however these were defined differently in each culture. Moreover, he proposed that culture plays a huge role in how intelligence develops as well as how it conceptualized, because it meant different things in different cultures.

2.3.3 *Howard Gardner's multiple intelligence theory*

In 1983, Dr. Howard Gardner, who is a famous neuroscience professor from the University of Harvard, and a psychologist as well developed the world known and applied theory of Multiple Intelligences (MI). His theory challenged the traditional beliefs in the fields of education and cognitive science as it rejected the idea that intelligence was a single entity that can be measured only through intelligence tests, widely known as IQ tests. He

proposed a new understanding of intelligence that is being incorporated rapidly worldwide. He states that individuals have nine kinds of intelligence that are reiterated in the way people interact. In his Theory of Multiple Intelligences, Gardner extended the original concept of intelligence to further include aspects such as interpersonal knowledge, spatial relations such as sports, music, in addition to linguistic and mathematical ability. In his book, Frame of Mind, Gardner (1983) asserted that everyone is born possessing the multiple types of intelligences, however individuals will develop only certain types of intelligence depending on many factors including culture, experience, environment etc. He then described the 8 intelligences as the following:

Multiple Intelligences

Linguistic Intelligence- This type of intelligence enables individuals to communicate and make sense of their world through language. It refers to the ability for one to use language efficiently to articulate themselves in a either a verbal or expressive manner. Lawyers, public speakers, writers, and poets all possess high levels of linguistic intelligence, according to Gardner.

Logical-Mathematical Intelligence – is associated with the ability to use abstract reasoning skills and knowledge. Moreover, it can be displayed through analyzing problems, including successfully solving mathematical problems and can be likened to academic intelligence. According to Gardner, philosophers, mathematicians, statisticians and scientists, all bank on this type of intelligence.

Visual Intelligence- is associated with the ability to distinguish between spatial or visual information, modify this information, and then reproduce visual images from memory. Architects and engineers usually rely on this type of intelligence.

Musical Intelligence- involves the ability to generate, convey, and understand meanings that are made from sound. Composers and those playing instruments such as pianos and violins, possess and display this type of intelligence. Gardner described this type of intelligence as similar to linguistic intelligence.

Bodily-Kinesthetic Intelligence- involves the ability to use one's body or part thereof to produce something that can be used to solve problems. Athletes, physicians, dancers, crafts people, and painters all use bodily-kinesthetic intelligence.

Naturalist Intelligence- involves to an individual's ability to distinguish and categorize things such as animals, plants, and various other objects in nature.

Interpersonal intelligence- is associated with the ability to easily identify and understand the motivations, feelings, intentions, and desires of other people. It allows people to work effectively with others. Individuals that possess this type of intelligence are more self -aware and in tune with other people's feelings and mostly work as counsellors, salesperson etc.

Intrapersonal intelligence- can be described as the capacity to display self - awareness, self-motivation through exploring one's inner world and feelings. Others have

suggested that combining interpersonal and intrapersonal intelligences can be likened to what we call, emotional intelligence.

In his book, Gardner (1983) viewed the different intelligences as pieces that rarely operate independently but are utilized simultaneously and tend to complement each other as people grow, develop skills, or solve problems. His argument was mainly that the field needed a theory that will account for human intelligence in its fullness; and this Multiple Intelligences Theory addressed that very concern. In recent years, other researchers have expanded this theory and introduced 3 more types of intelligences. These include Emotional, Social, and Spiritual Intelligences and are discussed further below.

2.3.3.1 **Emotional, Social and Spiritual Intelligence**

Emotional Intelligence

Emotional intelligence (EQ), which can be described as the capacity to recognize, understand, experience, and articulate human emotions in a productive and healthy manner, is another psychological construct that has been studied extensively in both popular and academic literature (Sellars, 2008). The roots of emotional intelligence began with Charles Darwin, a famous evolutionist, who emphasized that emotional expression was one aspect that is highly important for the human species to adapt and survive (Assanova & McGuire,2009). While conventional intelligence concepts emphasized cognitive aspects such as memory and problem-solving in the 19th century, many scholars in the intelligence field of study later began to recognize that there were non-cognitive aspects that were also important in intelligence. Thorndike, a prominent thinker, later suggested that people have many kinds of intelligence, one kind is referred to as emotional intelligence, which he described as the

ability to understand other people other than oneself which will in turn allow that individual to behave wisely in human relationships (Assanova & McGuire,2009). Much like Darwin, Nelson and Low (2003) emphasize that emotional intelligence is one factor that plays a significant role in how one successfully navigates and survives through life.

Nevertheless, there are many arguments about the definition of emotional intelligence, just as the definition of intelligence itself is very controversial. As the field grows at such a rapid rate, social scientists are constantly changing their own definitions as well. Salovey and Mayer (1990) attempt to define emotional intelligence as the ability to control one's own and others' feelings and emotions, distinguish these, and then utilize that this information in a way that will guide decisions and actions taken by that individual. Goleman (1996) asserted that an individual who does not possess self-awareness, empathy, and cannot regulate their emotions effectively and use them to manage relationships with others will never go far in life.

This suggests that emotional intelligence directly impacts an individual's ability to lead and ultimately to be successful in everything they undertake. He further postulated that there are various abilities that make up one's emotional intelligence including the capacity to recognize own emotions, regulate them, and be able to enhance one's development as a result. These abilities are the foundation for the construction of human relation, communication ability, and social skills (Murata, 2008). Engelberg and Sjolberg, (2006) asserted that inter-personal skills, which they described as the ability to understand the sincere meaning of social cues in others' behavior, and on the other hand, to regulate one's own emotional behavior; are also foundations of emotional intelligence. Bradberry and

Greaves (2009) claim that an individual who possesses emotional intelligence can relate better with different kinds of people and is attuned and considerate of other people's feelings and emotions. Thus, it appears from the literature, that emotional intelligence is another type of intelligence associated with good interpersonal, social and leadership skills.

Social Intelligence

Research on social intelligence started only a few years after Spearman (1961) introduced academic intelligence. Thus, social intelligence was one of the first candidates for a new intelligence construct to complement traditional human ability concepts. Social intelligence has quite a long history. The idea goes back to Thorndike (1920), who defined social intelligence as "the ability to understand and manage men and women, boys and girls – to act wisely in human relations". As noted by Landy (2005), Thorndike did not build a theory of social intelligence, rather he only used the idea of social intelligence to clarify that intelligence could manifest itself in different planes (e.g., abstract. mechanical, social) (Lievens, & Chan, 2010).

Ford and Tisak (1983) also defined social intelligence in terms of behavioral outcomes and were successful in supporting a different domain of social intelligence. They defined social intelligence as an individual's ability to achieve relevant goals in specific social settings. More recently, Goleman's (2006) definition separates social intelligence into two distinct categories: social facility as well as social awareness. He defined social awareness as "what we sense about others" and defined social facility as "what we then do with that awareness" This conceptualization is closely linked with what we refer to as emotional intelligence, which is probably why Landy (2005), asserted that emotional

intelligence is a so-called new construct that has merely replaced the previous idea of social intelligence. Similarly, Bosman (2003) asserted that social intelligence is a broader construct that incorporates emotional intelligence.

According to Albrecht (2006) social intelligence is the ability to get along with others and get them to cooperate with you. Although this definition of social intelligence is simple, gaining social intelligence takes an intricate combination of sensitivity to the needs and interests of others, a generous attitude, ability to be considerate as well as being able to interact appropriately and successfully with other people in various settings.

Beheshtifar and Roasaei (2012) asserted that social skills represent a broader range of abilities that is most closely linked to the construct of social intelligence. These social skills that are key components of social intelligence include the ability to express oneself in social interactions, ability to "read" and understand different social situations, norms, knowledge of social roles, interpersonal problem-solving skills, as well as social role-playing skills. Furthermore, Beheshtifar and Roasaei (2012) proposed that social intelligence has a meaning closely related to notions such as social skills, competence and intelligence may be regarded as an overall construct for comprehending how successfully people handle social relationships. Social intelligence also includes selecting a suitable response and being flexible on one's behavior (Robert, 2008). Meanwhile, people who have not developed their social intelligence skills cannot connect effectively with others and may even alienate or offend them (Beheshtifar & Roasaei, 2012).

On the contrary, one might posit that social intelligence and emotional intelligence are two constructs and aspects of intelligence that are intertwined with each other based on their conceptualizations which are similar.

Spiritual Intelligence

Following the emergence of Gardner's Multiple Intelligences Theory, numerous researchers and philosophers began to consider spirituality, as comprised of a set of specific abilities or capacities. Emmons (2000) in particular, asserted that spirituality may be conceptualized in adaptive, cognitive–motivational terms, and, as such, may underlie a variety of problem-solving skills relevant to everyday life situations. He further proclaimed that there are a set of skills and abilities associated with spirituality relevant to intelligence, and individual differences in these skills constitute core features of the person. However, he did state that he is not that suggesting that spirituality can be reduced to intelligence, or even to a set of cognitive abilities and capacities. Spiritual intelligence consists of a number of abilities and competencies that may be part of a person's expert knowledge. Spiritual information is part of a person's knowledge base that can lead to adaptive problem-solving behavior (Emmons, 2000).

According to Emmons (2000) there are at least five core abilities that define spiritual intelligence. These include the capacity for transcendence; the ability to enter into heightened spiritual states of consciousness; the ability to invest everyday activities, events, and relationships with a sense of the sacred; the ability to utilize spiritual resources to solve problems in living; and the capacity to engage in virtuous behavior, that is, to show forgiveness, express gratitude, to be humble, and to display compassion. Singh and Sinha

(2013) also assert that spiritual intelligence is the central and most fundamental of all the intelligences, because it can be the source of guidance for others, act as an integrating intelligence, that links our rational and emotional intelligence.

Although spiritual intelligence is a relatively new concept, various authors have opposing views about it. They then reduced Gardner's multiple intelligences to represent three basic intelligences: intellectual, emotional, and spiritual. The spiritual is the core intelligence that describes the ability to solve problems that relate to values, vision, and meaning. According to these authors, creativity is a major aspect of spiritual intelligence, and spiritual processes are manifested in physiological ones. The centrality of spiritual intelligence to individuals' lives is also expressed in Rogers and Dantley (2001) who view spiritual intelligence as the root of thinking, which precedes any accepted structures or categories of thinking.

2.4 Characteristics of intelligence

Intelligence is defined as mental capability that involves characteristics such as the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smartness (Parankimalil, 2014).

The Krishna Kanta State Open University, Faculty of Educational Psychology (2011) outlined some of the characteristics of intelligence as follows:

- Intelligence is the power or capacity of human being which helps one reason, analyze, judge situations effectively.
- Intelligence is both an innate construct and can be acquired as well
- Intelligence can be described as an all-round mental efficiency
- An all-round mental efficiency means that it includes all the qualities in mental development of an individual.
- Through the process of intelligence, the whole general and abstract thinking, reasoning powers are revealed.
- Intelligence is the ability of adaptation and adjusting to a new situation
- Intelligence is the ability to think abstractly. It is also the capacity to learn from the experience, and hence, it makes the profitable use of the past.
- Intelligence is the ability for abstract thinking as well as the capacity to learn from the experience
- Intelligence is not knowledge though acquisition of knowledge depends to a great extent on intelligence and vice-versa.
- Intelligence is not a guarantee against abnormal behaviour, backwardness, and delinquency in spite of the fact that it is one of the factors contributing towards achievement, adjustment and character formation of a person.

In short, we may thus say that intelligence is the power or capacity through which man can identify himself as ‘man’ that is, a man of ‘super-human’ ability. It is the capacity through which we can reason, think, comprehend, or appreciate, analyze, and judge. Even on the controversy on intelligence about its nature as ‘acquired or innate’, the modern

psychologists are of the opinion that intelligence is partly innate but due to repetition or exercise it can be developed. Therefore, we can say that the capacity of intelligence is both innate and acquired.

2.5 Genetic factors contributing to intelligence

There has been a long continuing debate about whether intelligence is inherited, acquired through environment, or is a combination of these and other factors. Some hold the notion that intelligence is heritable while others hold the notion that nurture, that is, environmental factors influence whether an individual is intelligent or not. Gray and Thompson (2004) utilizing a biological perspective, undertook an investigation an explored the influence and role of genes in the development and acquisition of intelligence. In their study they found that monozygotic twins raised separately following adoption show a correlation of 0.72 for intelligence; that is, one twin's intelligence strongly predicts the other's, despite their different rearing environments.

Twin data indicate that there is a strong genetic component to intelligence, but several non-genetic factors that make monozygotic twins more similar could confound this association. Furthermore, they posited that the heritability of intelligence also increases with age - as we grow older, our phenotype reflects our genotype more closely. A strictly environmental theory would predict the opposite. Gray and Thompson (2004) asserted that some genes are not activated until adolescence or adulthood, but a more plausible explanation of age-related changes in heritability might be gene–environment correlations. As individuals select or create environments that foster their genetic propensities throughout life, genetic differences in cognition are greatly amplified. Similar gene–environment effects might help

explain the paradox of high heritability but strong effects of environment on the intelligence of children. They further proposed that a common misinterpretation of the heritability findings is that, if genetic factors contribute to individual differences in intelligence, there is no point in educating or being educated.

It is important to remember that many environmental factors affect intelligence either favorably or adversely. For example, it appears that prenatal environment affects intelligence, that is, when an individual is still in the womb, and premature birth can impair it. Interestingly, Gardner (1983); Gardner (1999) also criticized the assumption that intelligence is hereditary, and that the environment and the individual do not have a shared relationship. Gardner argued that environmental aspects such as one's socio- economic status, educational background, societal values, culture, and norms are perceived as not playing a role in the individual's cognitive development. In this case, other studies have shown that one's intelligence is taken as a true reflection of one's maximum level of mental functioning which cannot change over time (Gardner 1983; Sternberg & Gardner, 1985).

However, the questions remain whether the high correlations found in intelligence between first degree relations (identical twins) result from a high genetic influence, or as a result of the same environmental factors that close relations share (Aiken, 1994). For example, monozygotic twins and adoption studies show an innate component of intelligence, which indicates a high concordance rate in intellectual ability between the first - degree relatives compared to the general population. These studies thus suggest that both genetic and environmental factors play a significant role in an individual's intelligence, however genetic factors seem to play a more dominant role.

2.6 Cultural differences in the perceptions of intelligence

In reviewing literature around cross cultural psychology and intelligence, Matsumoto and Juang (2007) previously proclaimed that there are cultural differences in the meaning and conceptualization of intelligence. Sternberg and Grigorenko (2004) both assert that the concept of intelligence can never be fully understood or rather, meaningfully be understood outside its cultural context as these are inextricably linked. This is because behavior may be considered intelligent in one culture, may be deemed otherwise in another culture and vice versa.

Furthermore, they claim that each culture has its own implicit theories of intelligence, which generally provide an underlying basis that shapes an individual's perceptions of a personal attribute, and as a result a certain word may not represent the same thing in another culture. Also, the relationship between different aspects of intelligence can vary across cultures with positive correlations proving to be negative in another setting. The relationship between culture and intelligence has been considered from three different perspectives and can be reiterated under the metaphors of "culture as a language", "cultures as a womb", and "culture as a forum" (Serpell, 1974a).

According to culture as a language, each human culture constitutes a distinctive system of meaning for representing the mind, within which intelligence is defined. According to culture as a womb, different human cultures generate different kinds of nurturing environments that stimulate the development of the individual's intelligence (Williams, 2009). The forum metaphor describes the community's shared culture that gives rise to the organization of education and the placement of a value on intelligence (Serpell, 2000).

Sternberg argued that majority of the population have a different conception of intelligence than most experts. He went on to say that these implicit theories become essential to understand because it is these very implicit theories that of intelligence that drive the way people evaluate their own intelligence and that of others (Swami et al, 2009).

Sternberg and Grigorenko (2004) assert that the ways that individuals, and societies define and understand the concept of intelligence is subjective. She furthers states that intelligence is a socially constructed concept as western people seem to conceptualize is as the ability to solve problems and possess mental skills, while people from African and Asian contexts/societies seem to think it's the ability to adapt to the environment, relate well with others and respect those around you. Below is a discussion of literature on how different societies conceptualize and ultimately construct the ideas and understanding of intelligence.

2.7. Western notions of intelligence

There has been extensive literature on Western conceptualization of intelligence over the years. Western conceptions of intelligence follow the notions of what intelligence is according to all the intelligence tests that are currently utilized around the world. These notions have evolved because of human adaptation to Western culture (Cocodia, 2014). It is important to note that Western countries are technological than others, and so are the cultures found within. Due to this technological environment, notions of intelligence include practical skills and abilities. Furthermore, Western countries are also more bureaucratic in nature and consequently require cognitive skills and strategies for decision-making, problem-solving as

well as thinking symbolically (Furnham & Buchanan, 2005). This suggests that because of the complexities of the Western society, intelligence then becomes adaptive in nature. A study done by Furnham and Buchanan, (2005) found that students in Europe referred to abstract reasoning, problem-solving, decision-making, and high academic achievement were all aspects of intelligence.

Another study by Sternberg, Conway, Ketron and Bernstein (1981) investigated lay and expert conceptions of intelligence in the United States of America (USA). This study was conducted by means of randomly recruiting laypersons at train stations, supermarkets or colleges and asking them to "fill out" open ended questionnaires about their conceptions of intelligent behavior. The behaviors described by the laypersons were grouped into three characteristics namely: Intelligent, Academically intelligent, and Everyday intelligent. The researchers continued their investigation by asking experts in the field of intelligence to rate whether the behaviors listed under each of the three groups are indeed characteristic of an intelligent person.

The participants rated verbal intelligence as important with high loadings showing up for characteristics such as "displays a good vocabulary", and "is verbally fluent". Problem solving abilities such as "able to apply knowledge to problem at hand", "plans ahead", and "makes good decisions" were also rated as important by both experts and laypersons in the US. The practical intelligence factors also had significant loadings for behaviors such as "displays awareness to world around him/her" and "displays interest in the world at large". Another Western study by Sternberg (2000) found that older individuals in the United States

emphasize practical aspects of intelligence and places a great deal of importance on general cognitive ability.

2.8 Asian notions of intelligence

Eastern conceptions of intelligence are described as rooted in various Eastern traditions (Das, 1994). Culture and traditions govern perceptions of intelligence in the region. Conceptions of intelligence differ significantly in Asia as the continent consists of a wide range of cultural differences and beliefs and seems to consist of a vast number of cultural differences in the world. For example, India which is in Southeast Asia has over 200 different languages on its own (Cocodia, 2014). Hindi is the official language and is also one of the most commonly spoken languages in the world, next to English and Chinese. Some Asian cultures embrace Taoist, Hindu, and Buddhist philosophies amongst others. These philosophies encourage moral and religious attitudes which are reflective of individual behavior, thus intelligence is interwoven with religion and moral behavior (Cocodia, 2014).

2.9 Taoist philosophies

This is one of the most domineering cultures of East Asia. The Taoist tradition describes an intelligent person as one who knows Tao (the true greatness) and can put this into practice, being perceptive and responsive to changes in immediate circumstances (Cocodia, 2014). In illustration, social skills are deemed important in Taoist tradition; meaning that individuals are expected to conduct themselves appropriately while maintaining suitable relationships in order to be considered intelligent. Taoism has found its way into all

Asian cultures influenced by China, including Vietnam, Japan, and Korea. Taoists perceive life as far-reaching, and their principles inspire the Chinese culture (Cocodia, 2014).

2.10 Hindu and Buddhist Philosophies

When looking at these two philosophies, they tend to view intelligence as encompassing behaviors such as determination, mental effort, comprehending, knowledge, discrimination, noticing, recognizing and decision- making (Das, 1994). The Buddhist philosophies describe intelligence as a phenomenon that is best used for acquiring knowledge. The assumption is that this knowledge being referred to is acquired through the five senses and five motor organs of an individual. This then suggest that according to the Buddhist culture, perception and motor skills are required for an individual to gather knowledge, which is quite similar to the Western conception of intelligence (Das, 1994). Moreover, being kind and considerate enables one to acquire knowledge and consequently be intelligent.

Das (1994) points out that the Buddhist culture conceptualizes intelligence as taking place within the individual only when they have crossed a stage of enlightenment which is characterized by concentration, wisdom, generosity, morality, and vigor. “At this stage, the individual has to give up any thoughts that are egocentric, letting go of any self-centered thoughts in order to achieve the most untainted form of intelligence. The individual has to abstain from any unnecessary negative emotions, prejudices, and unfavorable temperamental behavior as this is likely to hinder achievement” (Cocodia, 2014).

Given the above background on Eastern cultures and intelligence it is evident that culture and intelligence are interwoven. Nevor and Khader (1995) also investigated conceptions of intelligence among Chinese, Malayan, and Indian mothers in Singapore. They found that the mothers perceived intelligence to include social interactive behavior, appropriate behavior, and cognitive and academic ability. Another study by Zengh and Wu (1994) found that Mainland Chinese people's conception of intelligence includes the ability to reason logically, adapting to new environments, being creative, accepting new things, being insightful, self-confident, having a good sense of humor and good imagination. This is also consistent with Western conceptions of intelligence.

A study by Yang and Sternberg (1997) which examined conceptions of intelligence among Taiwanese Chinese people revealed a structure of multiple intelligences similar to Gardner's multiple intelligence theory. Taiwanese Chinese people perceived intelligence as associated with interpersonal intelligence which refers to the ability to understand and interact effectively with others, to note distinctions among others, sensitivity to the moods and temperaments of others, and the ability to entertain multiple perspectives. Other characteristics of Taiwanese conception of intelligence include general cognitive ability, intellectual self-effacement, and intellectual self-promotion. This is quite consistent with Gardner's multiple intelligence theory. Asian conceptions of intelligence seem to be cognizance of social skills, cognitive skills, and knowledge.

2.11 African notions of intelligence

The African continent is filled with a range of diversity in terms of beliefs, food, language, religion and in which there co-exists people of different cultures and ethnicity (Cocodia, 2014). Apart from all this diversity when it comes to conceptions of intelligence there seems to be more similarities than differences in the few studies that have been done. However, in South Africa specifically, there haven't been any studies that have been carried out, nevertheless the present study hopes to contribute to closing this gap. In Africa, many studies have been done over the years to investigate the perceptions of intelligence.

There is an old study that was conducted by Ogbu (1988) in Nigeria where he discovered that Yorubian people conceptualize intelligence as sensible behavior. Moreover, he found that in as much as they place emphasis on this, at the same time they also place importance on practical skills as interwoven with intelligence. This was found to be the same trend with Chewa people, whose perceptions were also investigated by Serpell (1989).

Particularly in Kenya, Grigorenko, Geissler, Prince, Okatcha, Nokes, Kenny, Bundy and Sternberg (2001) did a study on the definitions of intelligence amongst people in the Ugingo Village for the purpose of understanding the implicit theories that side. Their findings revealed that perceptions of intelligence were characterized into four domains in which there was rieko, winjo, paro and luoro.

To give a brief description of these concepts firstly, rieko can be loosely translated to smartness or competence. It refers to what is termed academic intelligence by the people in the West, although it is not limited to this but also includes other skills such as planning and resource management skills as well as traditional healing skills amongst others. Winjo can be

referred to as an individual's ability to understand, comprehend different processes, and discriminate between what is of importance and what isn't. Paro encompasses practical thinking. This refers to the ability to think, apply thinking to identify problems and provide solutions. Lastly, luoro refers to social intelligence in which an individual shows respect, obedience, responsibility and is considerate in everything that they do. In Zimbabwe, the Shona word for intelligence, ngwara, means to be prudent and cautious, particularly in social relationships. Among the Baoule of Burkina Faso, service to the family and community and politeness toward and respect for elders are seen as key to intelligence (Cocodia, 2014).

In the above review of literature on how different cultures perceive intelligence, it can be concluded that there are both similarities and differences in the perceptions of intelligence across Western, Eastern and African cultures. All three cultures emphasize the importance of knowledge as product of intelligence. For example, in the Asian, Western and African they all conceptualize knowledge as a product of intelligence. In these cultures, knowledge is sought through environmental experiences. This may be achieved formally or informally by reading educational or religious books, learning in school or at home (Cocodia, 2014).

Social skills (interpersonal skills, social attributes, and social relationships that are maintained successfully) are also described as characteristic of an intelligent person in all three cultures but emphasized more in the African culture, and this may be due to the fact that in Africa there are more extended family systems, and the concept of Ubuntu plays a huge role in the value of these social skills (Cocodia, 2014).

In as much as there exists these similarities, differences in conceptions of intelligence amongst these cultures also exist. When one looks at the Western and Asian cultures, there seems to be a lot of emphasis on high academic achievement whereas in the African cultures emphasis is put on an individual's social behavior and practical intelligence which is useful for daily tasks.

Also, different subcultures in the African context seem to have different concepts for intelligence such as ngom, luoro, rieko etc, of which have no exact equivalence in the other two cultures. In the same vein, concepts such as processing speed are foreign in African cultures and have no equivalence as well. Moreover, in the Asian cultures, their perceptions of intelligence are intertwined with aspects such as religion and morality. This is not the case in both Western and African cultures (Cocodia, 2014). This indicates that there are significant differences in the perceptions of intelligence across cultures and consequently, that the different cultural value system of each culture will influence people's notions of intelligence thus making perceptions of intelligence highly interwoven with culture.

2.12 Intelligence and Academic Achievement

According to Sternberg (1993), achievement involves student skill and performance; it is multilayered; it is intricately linked to human growth and cognitive, physical, social and mental development; it represents the entire child; it is not linked to a single case, but occurs through time and levels, through the life of a student in school and through post-secondary years and working life. Mackintosh (1998) asserts that more intelligent children are believed to do better at school than less intelligent children, and more intelligent adults are likely to be

more effective and progressive in several domains than less intelligent ones, although he also agrees that other variables play an equally important role in both cases. Mackintosh, (1998) further proclaims that intelligence, especially when it consists of formal teaching techniques, can be a powerful predictor of success in classrooms.

Dobzhansky (1993) states that the tests conducted have produced ambiguous results that do not necessarily support this view, regardless of the correlation between intelligence and academic achievement. Later in the same paper, however, he argues that there is, undoubtedly, a correlation between intelligence, language skills and academic achievements in learners. In addition, he introduces the term academic intelligence, which he identifies as a good overall indicator of logical thinking that can be characterized as analytical and goal oriented. The same author argues that high intelligence will always assist individuals in their intellectual pursuits and may positively impact their learning and life in general. From the research carried out, one can deduce that intellectually inclined students will do much better in learning than those less gifted, but also that intelligence alone may not be the greatest factor in their achievement. Low intelligence may never hinder the learner from becoming a high achieving student, but it may never help them either.

In addition, Dobzhansky (1993) supports his claims by presenting research findings on links between intelligence and educational achievement observed. Evidently, it is possible to expect high intelligence to correlate substantially with educational achievement. The correlation is positive, but as students' progress through the education system, it decreases dramatically. This may be because individuals, in their ability to understand abstract concepts, adapt to their environment, and learn from experiences, differ from each other.

Although these individual distinctions can be large, they are never entirely constant. What kids learn in school is largely based not just on their individual skills, but also on the amount and/or standard of teaching they receive. Also, how well students do in school often greatly depends on their teachers' instructional methods as well as their individual skills.

There are many (Jensen, 1973; Herrnstein & Murray, 1994; Eysenck, 1975) that argued it was the children's intrinsic ability that determined their school success. Others (Delvin, Feinberg, Resnick, & Roeder, 1997; Fraser, 1995; Gould, 1981; & Blau, 1981) objected that the environment could be the ultimate contributing factor to their school success, even so their social success. From the above opinions and research, it can be assumed that intelligence is interrelated to academic achievement in general as well as in general learning ability and that the relationship can be partly responsible for successes or failures of students in the process of learning.

In their research, Krapohl et,al, (2014) found that while intelligence accounts for more than any of the other domains of the heritability of educational achievement at age 16, the other domains collectively accounted for about as much heritability as intelligence. They also argued that genetic impact is stronger than intelligence and other behavioral characteristics for academic achievement are related to educational achievement largely for genetic reasons. Therefore, this indicates that children vary in how easily they learn and perform exams for genetic reasons, and not only because of variations in intelligence, but because of a whole range of genetically linked traits, including self-efficacy, personality, and behavioral issues, as well as intelligence (Krapohl et,al, 2014).

2.13 Student's perception of intelligence

Many studies have been done over the years on the implicit theories of intelligence, however the origin of such perceptions has not been fully understood yet. Also, there is not much literature available on student's perception of intelligence in the African context, however, there has been a few studies that have been done in other contexts, which are relevant to this study. Jaap et.al, (2011) investigated experiences of peer related intelligence at a Netherlands university. The study found that the perceptions of intelligence are socially constructed as majority of the students revealed that a high level of verbal fluency and academic achievement were one of the characteristics or deciding factors of an intelligent person, thus they defined intelligence as the ability to reason fluently when communicating as well as being able to achieve academically.

Contrastingly in a similar study done by Roberts (2012), there was a tendency for students who did not think they were intelligent based on average or poor academic achievement to be viewed as intelligent by other students. In this regard, such peer reputations may represent partly a social construction that is informed by factors/aspects that are not associated to the more objective way of viewing intelligence used currently in intelligence testing all over the world.

Another study done by Beyaztas et al (2017) on student's perceptions of intelligence found that there are generally two ways students perceive intelligence. They either view intelligence as a fixed entity or an incremental entity. Perceiving intelligence as a fixed entity

means that individuals believe their basic abilities, intelligence, and talents are just fixed traits. They have a certain amount and that's that. Alternatively, those that perceive intelligence as an incremental entity have an underlying belief that their learning and intelligence can grow with time and experience. These people think they can become smarter and know that their effort impacts their progress, and then they put in extra time, contributing to greater accomplishment.

A study done by Mokoena (2013) in the University of KwaZulu Natal, investigating students' perception of intelligence, specifically multiple intelligences, found that majority of the sample were of the view that intelligence is primarily inherited, although environmental factors can enhance it to a certain extent. Moreover, the participants argued that intelligence was divided into various types and of those types logical-mathematical, spatial, and verbal intelligences tended to be the most widely mentioned and acknowledged types of intelligences, indicating that these may be the most dominant in this demographic group.

In essence, the literature on students' perceptions of intelligence depicts that in general, students believe that intelligence is the ability of an individual to reason fluently with themselves and when communicating with others, as well as achieve academic success. Lastly, over and above this, they also believed that an individual is either born intelligent or not, thus there is no room for improving or gaining more intelligence as one grows. Therefore, this study aims to explore whether South African university students share the same sentiments in the way they perceive the nature of intelligence. Considering the above, it also becomes critical to address the question of "how are these perceptions constructed and where do they stem from?".

2.14 Factors that influence student's perceptions of intelligence

Farsides and Woodfield (2003) conducted a study that aimed to explore what shapes students' perception of intelligence. They found that a mother's praise and positive feedback from a student's teacher shaped their perceptions of intelligence tremendously. Interestingly, the study also found that female students tend to endorse an incremental theory of intelligence which stemmed from the kind of praise and encouragement they received from their parents, which for the most part, focused on their successful outcomes (academic achievement) rather than their challenges or the mechanisms they used to achieve academic success. This is contrast with studies which found that students generally have a fixed theory of intelligence. Moreover, the literature postulates that such environmental cues (mother's praise and positive feedback from teachers) in social context influences students' own perception of intelligence.

Gest et al, (2005) proposed that students' perception of intelligence is largely shaped by changes in their self-concept and academic achievement. When it comes to the reason students associate intelligence with these factors, especially academic achievement, most of them stated that it was because their families praised them and deemed them wise when they achieved academic success. Things such as being the wise one, having a bright future, being respected as well as given status in the family home were reported as part of the comments given to them by their family members. This, in turn automatically contributes positively to their self-concept. The minority of the students reported that it was because the teachers in previous years have constantly picked on the learners who obtained good grades as the

intelligent ones in the classroom. This therefore shows that student's perceptions of intelligence are largely socially constructed by those that have the most contact with them.

2.15 Personality and Intelligence

Previous research has investigated the association of personality traits with intelligence and achievement. The findings have largely supported the notion that the famous "Big Five" personality theory, particularly "Openness to Experience" is positively and significantly correlated with intelligence. In particular, a study by Bates and Shieles (2003) suggested that the nature of this association is that being open to experiences is significantly linked to acquiring knowledge and learning in general. Some studies have reported significant positive correlations between Openness to Experience and academic achievement (Farsides & Woodfield, 2003; Hair & Graziano, 2003) while others have reported no association between the two (Busato et al., 2000).

A key difference between a social skill and personality trait is that the former is learned, whereas the latter is relatively stable. Research has found that they are only moderately (.20) correlated (Busato, Prins, Eshout, & Hamaker, 2000). However, both constructs are also related in that social skills enable personality trait to show their effects (Ferris et al., 2001; Hogan & Shelton, 1998). Another perspective on the intelligence-personality link assumes a developmental dependence between the two constructs, such that personality traits influence the degree to which people apply or invest their intellectual abilities. This approach may explain the relatively moderate (0.30 to 0.40) correlation between openness/intellect to experience and cognitive ability. It has been suggested that

openness/intellect correlates more specifically with gc rather than gf because high openness may motivate a person to engage in intellectual pursuits, which in turn increases gc (Moutafi, Furnham, & Paltiel, 2005; Zeidner & Matthews, 2000).

Research has indeed confirmed that social skills moderate the effects of personality traits. In a recent study by Kretzschma et al. (2018), they found no single personality-intelligence relation or association. They further suggested that there was a need for further investigation around the association between personality and intelligence. It appears that findings regarding whether intelligence has any links with intelligence has been inconsistent and therefore, it is necessary that these studies be replicated before any conclusions can be drawn.

2.16 The influence of age and level of education in student's perception of intelligence

There is a huge lack of literature that explores age and level of education differences on student's perceptions of intelligence in Africa and in other contexts, however this particular study hopes to close this gap. There was one longitudinal Turkish study that was conducted by Wallace, Beyaztas and Hymer (2018) which assessed this, and it revealed that university students who were doing their first and second year of study, perceived intelligence as a fixed entity, something that one is either born with or not. Interestingly, when the same students were asked again in their fourth and fifth year of study, there was a significant difference in their perception, as they suddenly that intelligence is a malleable concept.

Beyaztas, Ihan and Barry (2016) in their study which aimed at determining the features of intelligence perceptions according to age, gender, class level and university departments also found that younger students believed intelligence was fixed and could not change, while the older students believed intelligence could be improved as one gets exposed to different experiences in the world. Interestingly, when gender was taken into consideration, males perceived intelligence as fixed while females believed it was dynamic and could either decrease or increase over time depending on an individual's exposure. It was also found that students in the social sciences and teaching courses believed it was fixed while students from the mathematics, and commerce believed it could always be improved.

Another study by (Cadwallader, 2009) explored implicit theories of intelligence amongst students and found that the older students' intelligence beliefs were closer to the entity perspective (though still largely incremental) while endorsing both learning and normative goals to a lesser degree. Studies by Leondari and Gialamas (2002) also found that pre-adolescent children are more likely than teenagers to hold incremental intelligence beliefs. In addition, Shim, Ryan, and Anderson's (2008) longitudinal study found that the importance of academic achievement declined over time – as their sample grew older, they endorsed all academic achievement to a lesser degree. This suggests that as individuals get older, and continue with the next level of education, their perceptions of intelligence change.

A study conducted by Mokoena (2013) also investigated students' perceptions of intelligence proposed that age differences in intelligence perceptions may be attributed to the fact that the younger generation attains more years of, and superior education than the older groups. Cadwallader (2009) proposed that shifting intelligence beliefs may reflect differing

school policies between year groups or developmental and social life changes. She further asserted that adolescence is a time characterized by rapid changes socially, physically, emotionally, and cognitively and these factors may have a key role in the changes witnessed. Thus, it would be interesting to find out if the same differences and reasons for these could be found in university students in South Africa.

2. 17 Theoretical Framework

For this study, social constructionism provided the framework and can be defined as an information and communication theory that explores the world's jointly constructed perceptions (Andrew, 2012; Galbin, 2006). Jackson and Penrose (2015) also define social construction in terms of how we think and use categories to organize our experiences in the world. Moreover, it is a theoretical trend that carries with it a different metaphysical assumption concerning the creation of truth and the development of knowledge (Andrew, 2012). Social constructionism is a viewpoint that clearly states that, regardless of social and interpersonal forces, much of human life happens as it does. It also concerns the way information is historically placed and integrated into cultural practices, beliefs and values (Galbin, 2006).

Social constructionism proposes that everything that people know or see as truth is socially situated in part, if not completely. Social constructionism is context specific, and it argues that there is no single, objective and true explanation or interpretation of phenomena,

rather it posits that there exist multiple different perspectives. It does not inherently mitigate the power of the concept to state that everything is socially created (Galbin, 2006). For instance, we may consider the concept of money, for instance. This is a term which is socially constructed. These paper bills are worth nothing without the value individuals ascribe to them. The rand is only worth its current value based on what we, South Africans ascribe to it. It is important to also note that the rand only works in its own currency market; it holds no value in other contexts. Nevertheless, the rand remains powerful within its own domain.

All these fundamental social constructionism ideas can be extended, including intelligence, to any study relating to human existence. Language is another comparable term from the social constructionist viewpoint, which serves more than just as a means of connecting people. This hypothesis believes that individuals exist in language and therefore the emphasis is not on the individual but rather on the social interaction in which language is produced, maintained, and abandoned (Galbin, 2006). Furthermore, through their use of agreed and shared meaning conveyed through language, individuals socially construct their own reality. Thus, our ideas about the universe are social inventions, implying that in different cultures, intelligence and what it means are constructed differently (Galbin, 2006).

Social constructionism is a movement to redefine certain psychological constructs, such as the mind, self, intelligence, and emotions amongst others. The concept of intelligence, for example, has been converted from a psychological phenomenon to a biosocial one. Individuals are biologically predisposed to a certain way that may fit well at a certain period within their social background. For instance, people who have talents are seen as talented because they fit what is socially required for survival biologically. One hundred

years ago, there were no "computer geniuses," because there was no way of communicating those abilities that existed. Further, in as much as we have computer geniuses now, what is considered a genius presently may not be considered so in the nearest future, indicate that this is socially constructed and may evolve or change over time depending on how people continue constructing their reality (Cottone, 2004).

According to Boundless (2016) gender-related social norms are created by socialization, the lifelong process of inheriting, understanding, and disseminating customs, social norms, and ideologies. The socialization process persists throughout one's life and is continuously renegotiated, but socialization starts as soon as one is born. Socialization is split into two distinct sections by sociologists. Firstly, there is primary socialization which takes place early in life, as a child and adolescent. Secondary socialization refers to the socialization that takes place as a child and as one meets new communities that need extra socialization in one's life. For socialization, the example set by the family of an individual is also important; children who grow up in a family with the husband a breadwinner and the wife a homemaker will appear to accept this as the social norm, while those who grow up in families with female breadwinners, single parents, or same-sex couples will establish distinct gender norm concepts (Boundless, 2016, para, 5).

Social constructionism pursues a more critical attitude towards ways of thinking and understanding which may be taken for granted, rather than a single objective truth (Burr, 2015). assume that human beings have little to no access to a reality that exists beyond their linguistic ability (Burr, 2015). This means that social constructionists assert that as soon as individuals seek to know and understand the external world of events and actions, they must

enter the linguistic realm as they describe this external world to each other and themselves. Burr (2015) described the basis of the social constructionist approach as follows:

"…even if there were some ultimate or fixed reality behind discourse…, we could never describe it, since to do so would inevitably mean to offer an account of it, thus transforming it into a discursive event" (p. 19).

Social constructionists often assert that language acts as a force of coercion. Language is a shared and inter-subjective framework that we use in conjunction with other people (Ritson, 2002). To the social constructionist, all knowledge exists because of the reflexive use of language in social encounters. They therefore claim that all human knowledge, including self-knowledge, is a phenomenon that is fundamentally inter-personal. Our inter-personal linguistic experiences therefore construct our interpretations of our social context and our reactions to that context. In social science, social constructionism originated in the 1970s and 1980s, taking up many of the problems posed as part of the earlier social "crisis" in social psychology and becoming a critical voice challenging the agenda of mainstream psychology. Prticularly, it challenged the essentialist, individualistic, and intrapsychic paradigm of the ego in psychology, replacing it with a fundamentally collective account of personality in which language is key (Ritson, 2002).

The individual, viewed through the constructionist lens, ceases to be a unified collective of stable psychological structures and characteristics, and becomes a fluid, fragmented and changeable assemblage, dispersed through social experiences and relationships and created through them (Burr, 2015). Therefore, this theoretical framework is

a useful paradigm to position this study and appears to fit well with the study proposed as it anticipates potential development of an African-based intelligence theory; and hopes to contribute by exploring new definitions and intelligence constructions based on exploring the perceptions of university students in a South African context.

2.18 Conclusion

The current study takes the arguments presented above as its point of departure. Its focus is on how university students perceive the controversial concept of intelligence which has been a point of interest for many decades, and presently more so, as African are desperate to develop their own intelligence test which will serve the masses in need of bias-free and culturally relevant intelligent tests that will not be based on Western conception of what intelligence is and consequently how it can be measured. The present study seeks to explore if the findings of this study will present different perspective on the concept of intelligence or will add and confirm what the literature that has been presented above has highlighted.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapters discussed the research approach which was employed by the researcher. It provides a brief description of the method that was used in undertaking the study as well as the rationale behind this. It also describes the various stages in the research, selection, sampling and recruitment of the participants, data collection processes, and the analysis of the data. Furthermore, it also covers the issues of validity and reliability in qualitative research and how it was ensured, as well as some of the ethical considerations.

This study analyzed various variables (age, level of education, culture, gender) that inform student's perception of intelligence at the University of KwaZulu Natal, Pietermaritzburg campus. The interaction between the participants and the researcher included the participants sharing their perceptions/ constructions of intelligence and their experience of the phenomenon. The researcher drew on the social constructionist paradigm, as the purpose of the study was to analyze the difference in student's perceptions in relation to demographic variables, to understand the reasons behind any demographic difference in these perceptions as well as what informs the relationship between these constructions and these demographic variables.

3.2 Research Design

The research design refers to the plan and the structure of the method used to gather evidence that will be answer the research questions. This research study employed a qualitative research design. A qualitative research design is "an effort to understand situations

in their uniqueness as part of a particular context and the interactions there" (Merriam, 2019). Qualitative research is interested in studying how people perceive their experiences, how their environments are constructed, and what meaning their experiences are attributed to. Therefore, because of its potential to allow the researcher to understand how individuals create meaning and how they construct their world, this design was chosen. Qualitative research design is multifaceted and, in this way, allows the researcher to understand a phenomenon holistically, which was the aim of this study.

3.2.1 Social constructionist approach to research methodology

In following the social constructionist technique, the researcher did not feel overwhelmed by the 'knowledge' of the expert that she did not have. She brought herself, her perspectives and past learning, and participated in conversation with the participants, and was mindful of her social and cultural history and the personal 'biases' that she already had. (Losantos, Montoya, Exeni, Santa Cruz & Loots, 2016).

Working from a social constructionist position meant that I had to be mindful of my status as a researcher. In this approach, as opposed to the modernist approach, which positions the researcher as an objective observer, I was recognized as part of the research process, coming from a position of subjective involvement. The position of the subjective participant that I assumed as the researcher meant that I had to constantly examine my own intellectual context, background, beliefs, preferences, and expectations and how these factors affected the results constructed in this study. This mechanism is called reflexivity and has the capacity to boost the results of the study (Brokensha, 2005).

In addition, social constructionist acknowledges the equal contribution of research participants and researchers as co-creators of a common reality. It also acknowledges that the presence of a universal psychology is impossible and, on the contrary, integrates and analyzes the historical, cultural, and social context of psychological knowledge as part of the study evidence (Losantos, Montoya, Exeni, Santa Cruz & Loots, 2016). Moreover, this approach understood research as a form of social action and thus encourages researchers to focus on the burden of writing about other people's actions (Brokensha, 2005). As a result, the vocabulary used to present results was carefully constructed as it can impact the way the individuals being studied responds to society.

Additionally, Anderson and Goolishian (1992) assert that within the research process, this approach promotes curiosity, and this attitude is based on the premise of not knowing, which then challenged the researcher to deviate from theories that explain or make sense of the results of the data. Instead, the researcher had to consider analysis as a liberating experience in which the researcher was able to recognize and decipher which data matched their previous knowledge and which did not.

3.3 Sampling

When conducting research, there are many possible sampling methods to choose from, although qualitative researchers usually focus on small samples. For the purposes of this study, purposive and convenience sampling methods was used by means of recruiting participants from the University of KwaZulu-Natal, Pietermaritzburg campus. Purposive sampling is a type of non-probability sampling method which meant the researcher had to

decide on the specific purpose, she wanted a participant to serve, and then recruited only the participants who closely fitted that specific description (Creswell, 2013).

In this case, male and female students who were either in the undergraduate level or the postgraduate level were recruited for this study, and their ages ranged from 19 years to 29 years. On the other hand, convenience sampling; a type of non-probability sampling method that involves using a readily available sample with, such as university students (Mokoena, 2013) was used by the researcher. The reason behind using this method, was largely because of the logistical and time constraints.

3.3.1 Recruitment

The recruitment of the sample was done through distribution of an advert with all the relevant information about the study around campus, library notice boards, cafeterias as well as in undergraduate and postgraduate residences. The advert also had contact details of the researcher, in which the participants were then able to contact the researcher and thereafter a WhatsApp group was created where suitable arrangements in terms of venue and time were discussed. The researcher also went to lecture venues and permission was sought from the relevant gatekeepers such as lecturers, where students were informed about the study and its details, as well as how to contact the researcher if they were keen to participate in the study.

3.4 Data Collection Method

Access to conduct this study with the University of Kwa-Zulu Natal (UKZN) student population was granted by the University's Registrar. Focus group discussions were conducted by the researcher to collect data. The participants were recruited based on similar

demographics and engaged in a discussion that was facilitated by the researcher on topic of the current study. The purpose of this technique was to enable participants to engage with each other to improve the quality of the results (Greenbaum, 2000). For this study, focus groups were appropriate as they allowed the collection of rich, in-depth data because open-ended questions were used to encourage participants to explain their opinions in their own words (Babbie & Mouton, 2005).The advantages of using this method include the fact that people were willing to share more insight in a group environment rather than in individual interviews, more especially because the topic was not of a sensitive nature, also this method allowed for flexibility in the questions that were posed to the participants. (Greenbaum, 2000). It is noteworthy that majority of the participants frequently used the Isizulu language when discussing their viewpoints, which may have posed as a language barrier to other participants who are non-Isizulu speakers.

There were two focus groups: one consisting of undergraduate students and the other consisting of postgraduate students. The first group consisted of 6 participants and the second group consisted of 5. Both focus groups discussions were held at the Psychology Building in the UKZN, Pietermaritzburg campus between 2 and 7 November 2019, and were recorded on a digital voice recorder. There was a mix of both females and males, and students from different race groups including Africans, Coloreds and Indian. Before the focus groups began an information, sheet was provided to the participants, together with the informed consent form, as well as the consent form to audio-record the group discussions. The researcher then emphasized that participation was voluntary, and participants had the right to withdraw from the study at any point in time should they wish so, without suffering any penalties (Wassenaar & Mammotte, 2012).

The focus group interview schedule consisted of semi structured questions. The focus group schedule was developed by the researcher informed by literature as well as specific intelligence theories. The focus group was conducted in English and was run over a duration of approximately 70-90 minutes. It is noteworthy that major

3.4.1 Sample Characteristics

Six of the participants were undergraduate students who were studying towards different degrees in Bachelor of Commerce and Bachelor of Sciences. Five participants were in their postgraduate studies, of whom four were studying towards their master's degrees the fields of Psychology, Statistics and Theology; and one student was studying towards their Honours degree in Human Resources and Supply Chain. Students interviewed were in the 19 – 29 age ranges. The sample comprised of nine Black Africans, 1 Coloured and 1 Indian. The participants used the English language to convey their thoughts however the IsiZulu language was occasionally used in which the researcher provided translations to the non-IsiZulu speaking participants.

3.5.1 Age & Levels of Study

The below table indicate the participant's levels of study and their choice of study.

Table 3.5.1

Participants' degrees and levels of study

Participant	Level	Degree and Age of Participant
Participant 1	Undergraduate	Bachelor of Commerce degree in Marketing & Supply Chain – 20 years old

Participant 2	Undergraduate	Bachelor of Commerce degree in Law & Economics – 20 years old
Participant 3	Undergraduate	Bachelor of Sciences degree – Plant pathology 19 years old
Participant 4	Undergraduate	Bachelor of Sciences in Agribusiness – 20 years old
Participant 5	Undergraduate	Bachelor of Commerce degree in Management & Supply Chain – 22 years old
Participant 6	Undergraduate	Bachelor of Arts in Law & Management -19 years old
Participant 7	Postgraduate	Master's degree in Research psychology -26 years old
Participant 8	Postgraduate	Master's degree in research psychology – 25 years old
Participant 9	Postgraduate	Master's degree in Theology – 28 years old
Participant 10	Postgraduate	Master's degree in Statistics -28 years old
Participant 11	Postgraduate	Honours degree in Human Resources & Supply Chain -24 years old

The table below indicate the participant's gender and age.

Table 3.5.2

Gender Distribution

Participant	Gender	Ethnicity/Culture
Participant 1	Male	African/Zulu
Participant 2	Female	African/Zulu
Participant 3	Female	African/Xhosa
Participant 4	Male	African/Zulu
Participant 5	Male	African/Zulu
Participant 6	Male	African/Coloured
Participant 7	Female	African/Indian
Participant 8	Female	African/Tshivenda
Participant 9	Male	African/Zulu
Participant 10	Male	African/Zulu
Participant 11	Female	African/Zulu

3.5 Data analysis

The data from the focus groups was first transcribed verbatim by the researcher. Thereafter, thematic analysis was employed. Thematic analysis is a flexible way of generating context for various themes in a data set and allows for the emergence of thick definitions (Braun & Clark, 2012; Guest., MacQueen., & Namey, 2011). Because the essence of the proposed research was an exploratory one, this analytic approach was useful and acceptable. In addition, the six stages of thematic analysis proposed by Braun and Clark

(2006) were used to discover various themes/discourses arising from the interviews of the focus group, which. These phases involved the following:

a) *Familiarizing oneself with the data*, which required the researcher to be fully immersed with the data, transcribe it, re-read it and then note down initial ideas.
b) *Generating codes*, where the researcher had to identify features of the data that appeared interesting and meaningful.
c) *Searching for themes*; this is where the researcher performed an interpretive analysis according to the relevancy of the themes.
d) *Reviewing themes* found in the previous step. This involved reading through the extracts that were related to the codes/themes in order to see if they supported or contradicted the themes
e) *Defining and naming the themes*, which included deciding whether the themes were in line with the objectives of the study.
f) *Producing a report* that will convince the reader of the validity of the analysis (Braun & Clark, 2006).

3.5.1 Identification of Core Themes

To have a more in-depth understanding of the phenomenon a thematic analysis approach was utilized. This approach involved firstly the identification of core themes. During this stage, core themes were identified and developed through analysis of the collected data. Data was collected in the form of focus group discussions that were audio recorded by the researcher. These audio recordings were then transcribed into a written format in MS-Word. Following this, the transcribed interviews were analysed to identify the

keywords. These keywords were then grouped into codes in accordance with the similarity of the underlying concepts. During the process, any new insights that were discovered were incorporated and developed. The main aim of this process is to ensure that the coding process is as close as possible to the data (Saunders et al., 2018).

During the development of codes, unique meanings were derived from the tags or labels for the transcribed descriptive interviews recorded for the study. These codes come in various sizes; thus, they can be single words, phrases, sentences, or whole paragraphs, which can either be connected or unconnected to a specific setting (Saunders, et al., 2018). In this study the researcher chose to use words and phrases rather than using whole sentences. This allowed a more detailed analysis to be done. During the process of identifying core themes, key words were listed along with the occurrence frequency.

The next activity was the critical examination of focus group excerpts, and this usually involved the use of a spreadsheet. In this case the spreadsheet used was Microsoft Excel and those words that were used most frequently were identified as key words. Using this tool, the keywords that were common and related to each other were grouped and categorised into different categories and these formed the basis of the emerging themes that were developed. Categories with related meanings were grouped together to form one theme. Each developed category was given an appropriate description, and the process was done iteratively until all relevant phrases and keywords had been coded and categorised (Saunders, et al., 2018).

3. 5. 2 Summary of Thematic Analysis

The interviews which were carried out with the ten participants were transcribed manually by the researcher with the aid of MS-Word. The researcher then read and re-read the transcribed documents to obtain an in-depth appreciation of the responses gathered. During this analytical reading the transcripts were annotated and with the help of MS Excel the key words that kept appearing were identified. From these key words, themes were identified. During the identification of themes, a more detailed observation—by noting and listing the information provided by the participants—was made to get a deeper understanding of the responses. The resulting themes were listed and then grouped to give rise to main themes and then sub-themes. The themes and sub-themes were then applied to the entire set of data to ensure the analysis was comprehensive and not selective.

3.6 Establishing Trustworthiness

In a qualitative study, trustworthiness is how researchers establish validity and reliability. Qualitative researchers ensure credibility, reliability, transferability, and confirmability to do this. Qualitative researchers strive to ensure the credibility of their studies, which refers to how true the findings of the researcher are. The steps recommended by Shenton (2004) were used in this study. During the process of data analysis, transcripts from the focus groups were checked against the audio recordings for accuracy purposes. Furthermore, peer review was conducted which involved meeting regularly with other researchers to ensure that data analysis was a credible process that represented the actual data collected.

3.6.1 Credibility

Credibility refers to the validity of the study, which focuses on trust in the correctness of the results and the understanding of the context in qualitative methods. It can also be equated to the internal validity used in quantitative studies and is concerned with the truth-value aspect (Korstjens & Moser, 2017). As proposed by Korstjens and Moser (2017) different techniques such as member check, persistent observation, prolonged engagement as well as triangulation can be used to ensure credibility in a study. The researcher used the technique of prolonged engagement with the data to address the threat to the validity of this study by investing enough time to become familiar with the information. Moreover, semi-structured questions were used in the collection of data. The researcher structured the questions in an open-ended manner to use a uniformed way of eliciting responses from the participants. These responses provided an in-depth exploration of the phenomena, that is intelligence, and the understanding of the context. A thematic analysis method was also used to ensure consistency in the findings by evaluating the themes within the data and coding them consistently. Individual extracts were coded into themes and various themes were placed together in terms of how they relate to the research questions.

3.6.2 Dependability

The methodological parallel to reliability in quantitative research is dependability in qualitative research. The reliability of data in quantitative studies is the extent to which results can be replicated to obtain them using the same processes (Ulin et al., 2002). This refers to the reliability of the data for qualitative researchers. Korstjens and Moser (2017) assert that reliability relates to how reliable the research method and the study results can be.

They further argue that qualitative researchers need to pay particular attention to the accuracy of the study process and obey the qualitative methodology rules and conventions carefully.

With regards to the current study, the researcher followed the guidelines as outlined by Ulin and his colleagues (Ulin et al., 2002) in terms of ensuring dependability of the results. To ensure dependability of the research process, the research questions were clear and logically connected to the research purpose and design. The consistency of the research process is one of the key aspects that address the dependability of the data. To address this concept, the researcher conducted the focus groups discussion by herself to avoid multiple fieldworkers using data collection protocols that are not comparable (Ulin, 2002). The semi structuredness of questions gave structure to the focus group schedule that the questions are clear and connected to the research purpose.

3.6.3 Confirmability

In terms of the study's confirmability, the researcher had to ensure that objectivity was maintained as recommended by Korstjens and Moser (2017), throughout the research process to achieve neutrality. Facilitating the focus group discussion interviews challenged the objectivity of the researcher, making it difficult for the researcher to make a distinction, between personal values and those of the research participants. To address the threat to confirmability of the data, reflexivity was applied by the researcher to deal with the matter. Through consultation with the supervisor and debriefing with other colleagues, the researcher was able to constantly monitor objectivity and thus ensuring that the research data was confirmable.

3.6.4 Transferability

Transferability can be seen as the degree to which the results of a particular research study carried out in a particular context can be applied to other contexts (Miles & Huberman, 1994 in Ulin, 2002). It is the qualitative analogue to the generalizability concept (Ulin, 2002). Transferability applies, according to Korstjens and Moser (2017), to how important the current study can be to other contexts. Pertaining to the current research question, the size, and the method of sampling used (i.e., convenient sampling), had implications to transferability. The results in this study, thus had to be interpreted with caution, as the research findings were reflecting the views of a small sample of undergraduate and postgraduate students at the University of KwaZulu Natal. The implications were that the research findings can only be utilized to explore and understand the perceptions of the University of KwaZulu Natal student population regarding intelligence.

3.6.5 Reflexivity

Analysis is necessarily viewed from a particular point of view and qualitative research is subjective, making it challenging for the investigator to retain objectivity in the research process at times. The priority of the researcher in conducting the interviews was to ensure that no harm and distress were suffered by participants as they shared their experiences (Korstjens & Moser, 2017). Although the participants knew that there were no rewards for participation, they still agreed to participate in the research study and cognizance was taken of the potential harm the focus group discussions may induce. Fortunately, no participants were harmed in any manner during the data collection period. Furthermore, the researcher remained self-aware and reflective in the process of data collection, analysis, and interpretation of the data. Additionally, to ensure she does not bring pre-conceived ideas and

assumptions to the research, the researcher regularly consulted with colleagues and supervisors.

3.7 Ethical considerations:

3.7.1 *Gatekeepers' permission*

The Gatekeeper's permission refers to obtaining access to conduct a study on the personnel, customers, or users of an organization (Singh & Wassennar, 2016). This can be either physical or informative. Each institution has the right to be aware of and allow a researcher to conduct research in its fields, especially if it uses human subjects as they are responsible for protecting the relevant stakeholders (Singh & Wassenaar, 2016). Permission to conduct research on campus was sought from the Registrar at the University of KwaZulu-Natal and was given (Appendix 1). Additionally, Risk Management Services were contacted to request permission to advertise the study on university premises of which they gave (Appendix 2).

3.7.2 *Informed Consent*

Informed consent is an essential component of both qualitative and quantitative research, especially research involving human participants (Byrne, 2001). This ensures that participants are protected at all costs. Informed consent should be freely and voluntarily given, participants should understand what they are being asked for, and participants should be competent to consent. This means for participants to participate in a research study, they need to be adequately informed about the research and understand that they have the freedom to participate and withdraw from the study at any time (Arifin,2018).The participants were requested to give written informed consent by means of signing an informed consent form

(Appendix 3) that will have details about the study, emphasizing that their participation is voluntary therefore they can withdraw anytime and there will be no negative consequences. Participants were also requested to also give written informed consent for the audio recording of the group discussions for transcribing purposes (Appendix 3).

3.7.3 *Confidentiality*

In the research context, confidentiality refers to the fact that the researcher must not discuss or disclose information provided to anyone by a participant and that the findings will be presented in a way that ensures that the participant is not identified (Wassenaar & Mammotte, 2012). To maintain confidentiality, participants were requested to use pseudonyms. They were also urged to avoid sharing any information discussed during the focus group with anyone else outside the group. To this end, participants were requested to sign the confidentiality pledge. Furthermore, the participants were informed that the documentation and the audio data will be kept safe and confidential by means of being locked in the supervisor's filing cabinet for a period of five years and will be destroyed thereafter. Additionally, any electronic data files will be encrypted with a password and destroyed after five years.

3.7.4 *Beneficence and non-maleficence*

In any research, it is important that the risk-benefit analysis should be positive with a reasonable relationship between the risks to the participant in the study and the expected benefits, if any, as well as the value of the knowledge acquired (Arifin, 2018). The

anticipated benefits for the participants in the study are not necessarily direct, but the findings of the study have the potential of informing the development of contextually relevant intelligence tests. There were no anticipated risks of participation in this study. The researcher did not foresee any physical, emotional, nor psychological harm that the study may exert to the participants. In facilitating the focus group discussions, the researcher was very vigilant in monitoring the participants' well-being during the focus group discussions, and received permission from the Student Support Services, to refer students who might be in distress there.

3.7.5 *Social value*

In terms of ensuring that the society benefits from the study, the findings of the study had the potential of contributing significantly to the development of an African based theory of intelligence in the near future. Ultimately, this will inform the development of intelligent tests (IQ tests) that are more valid, reliable, suitable, and relevant for the people in the African context.

3.7.6 Conclusion

This research methodology chapter outlined and reflected the process that was undertaken when this present study was conducted. The chapter revealed that the study employed a qualitative approach and utilized a social constructionist framework throughout the study. Further this chapter illuminated how the process of data collection, through utilizing focus group discussions, observing non-verbal signals of the participants as well as sources from the literature review was conducted. The data collection method and particular

sample used was employed to address the aims of the study and the research questions. This chapter further illuminated methods that were used to analyze the data, how trustworthiness of the data was ensured as well as ethical considerations that were employed to protect the participants.

CHAPTER 4: FINDINGS AND DISCUSSION

4.1 Introduction

The aim of this chapter is to present the findings of this current study and simultaneously analyse and discuss the findings of this study which was conducted to analyse demographic differences in students' perceptions of intelligence at the University of KwaZulu-Natal, Pietermaritzburg campus. The study took a qualitative research approach in which an inductive, iterative process was followed with the specific aim of understanding whether demographic variables affect the students' perceptions of intelligence.

This chapter presents findings and discusses them according to patterns, trends and overall themes that emerged from the thematic analysis of data, in relation to the research questions. During the process of transcribing the focus group discussions, the data was classified into themes as well as sub-themes. These themes that were developed from the data provided by the participants was then synthesized to provide a holistic picture that will give responses to the research questions. This process of data analysis assists the researcher to be able to provide responses to the research questions in a systematic manner according to Mouton (2001). Further he recommends that it is important for the researcher to maintain the anonymity of the participants throughout the research process, as followed in this study. Some of the major findings revealed that there are indeed demographic differences in the way students perceive intelligence, particularly level of education. The findings also revealed that there are various reasons for these differences in student's perception of intelligence. Furthermore, the findings also highlighted that there are various factors that inform the student's perception of intelligence.

Specifically, this qualitative study sought to answer these research objectives:

- To establish students' perceptions of intelligence
- To establish what shapes the student's perception of intelligence
- To explore the demographic differences in students' perceptions of intelligence and reasons thereof

4.2 Findings of the Study

The aim of this study was to understand and document how the University of KwaZulu Natal's student population conceptualize intelligence, as well as to establish any demographic differences and why they exist. Below is a presentation and discussion of the findings as described by the participants.

4.2.1 Level of education differences in the perceptions of intelligence

4.2.1.1 *Intelligence is associated with high levels of academic achievement*

In the process of the thematic analysis, the above theme was highlighted as there were clear indications that the younger, undergraduate group perceived intelligence in a fixed and less abstract manner as compared to the older, postgraduate group. The undergraduate group comprised of both female and male undergraduate students between the ages of 19-22, while the postgraduate group comprised of both female and male postgraduate students between the ages of 24-28.

Majority of the participants in focus group 1, which consisted of the undergraduate group of participants indicated that they generally perceived intelligence as the ability to

achieve academically, and apply the knowledge acquired through education in different contexts such as through a career or a specific job. The participants in this group strongly expressed that in as much as the abilities mentioned above were not the only exceptions, the ability to do well scholastically, and achieve high academic standards that are set out in educational institutions such as schools, colleges, and universities, is inextricably linked with intelligence and lack thereof implies lack of intelligence in an individual.

The extracts below support the above statement:

> ***(Participant 1, Male, 20): …*** *For me, I look at intelligence in two ways, or rather I believe that it has two sides to it. But importantly, for me to say one is intelligence, they need to be book smart. What I mean by book smart is that they need to be able to grasp and understand different concepts learnt in an academic environment, they need to able to learn when they are being taught as well as from their own experiences. For instance, here in university one needs to be able to pass their modules and actually comprehend what they have learnt so they can re-apply it in tests, exams or when they are working in a specific job.*

> **(Participant 2, Female, 20)**: *I personally believe that I've always been intelligence because ever since I started school, I've always been an A student although also good at different kinds of sports. Even now at university, I am still getting really good grades and my parents also tell me that ngihlakaniphile based on my achievements. ... At primary school I learnt that intelligence is associated with getting good grades, and then now in university I've learnt that as much as you must have good grades you still need to learn how to relate with people as well.*

(Participant 6, Male, 19): *For me in order to deem one intelligent, they need to be able to be in competition with themselves so they can be able to improve and challenge themselves and others as well. Also, academically, they must excel, meaning they must be able to innovate, like take ideas that they are being taught to the next level and not just plagiarize.*

Participant 1 claims that intelligence is divided into two parts and can be broken down into being able to perform well academically; being able to learn when taught by a more knowledgeable other as well as from one's own daily experiences. He also implies that one must be able to apply the knowledge they have learnt on their own, without the assistance of the more knowledgeable other, in this case the teacher, to provide evidence that intelligence has emerged. It appears that intelligence exists at a surface level in any individual however it needs to be extracted and enhanced for it to fully exist through an individual. In the same vein, Participant 2 claims that she has always been intelligent because of high levels of academic achievement that she received during her schooling years. This suggests that she perceives intelligence as a by-product of being able to learn from a more knowledgeable other (teacher in an academic context) and then re-produce what you have learnt through a test or exam where one can achieve good academic performance. Further, her statement suggests that when one is unable to obtain an "A", which is the highest level of academic achievement, then they do not possess intelligence. This supports what many academics have claimed previously; that there is a connection between intelligence and academic achievement. Moreover, Participant 2, highlights that over and above excelling academically, one needs to be consistent at this and relate well with other people. With the latter, the

participant introduces an idea that intelligence has a social aspect to it. This finding suggests that intelligence is unlikely to be a static construct; it is rather a fluid and progressive phenomenon which is multifaceted.

Participant 3 on the other hand, highlights that an intelligent person must be in competition with themselves and display high levels of intrinsic motivation. Furthermore, he suggests that for a person to be deemed intelligence they need to be able to transfer knowledge that is acquired from the process of education, enhance, and develop it further. Therefore, it appears that intelligence comes as a result or by product of the individual being able to apply what they have been taught in an academic context, into different contexts on their own, without the assistance of the more knowledgeable other (MKO). Moreover, Participant 6 implies that intelligence emerges only through the ability of an individual to use the skills and knowledge acquired through education and then using it to enhance one's cognitive development to the next highest level. Participant 6 also implies that this can be seen through one being innovative and coming up with more abstract ideas that build on top of the one's he's been exposed to through education and high academic performance.

The above extracts highlight that the undergraduate participants possess a much more narrow, fixed, and simplistic perception of intelligence that is largely associated and inextricably linked with being educated and high academic achievement/performance. In essence, majority of the participants in the undergraduate sample perceive intelligence as a construct generally associated with the capacity to learn; and that academic achievement is knowledge acquired through education. A considerable number of studies show that intelligence is one of the most important predictors of academic performance (e.g., Deary,

2010; Karbach, Gottschling, Spengler, Hegewald, & Spinath, 2013; Weber, Lu, Shi, & Spinath, 2013). In general, the correlation was found to be very high (0.9), suggesting that there is a significant relationship between intelligence and academic achievement correlations between intelligence and academic performance. Furthermore, a very recent study by Morales-Vives, Camps, and Dueñas (2020) found that intelligence, motivation to work hard and seriously in academic activities, and the capacity to apply the knowledge learned to a higher level are the variables that best explain academic performance. In the undergraduate sample, this was also highlighted as one of the main findings of the study. Sternberg (2003) asserted in his theory of successful intelligence that intelligence is closely aligned with academic problem solving. He continued to describe intelligence as an ability to learn, analyze, compare, and contrast, much like the tasks that are performed rapidly in the educational institutions mentioned by the participants.

The findings of the current study confirm the claims that were made by Vygotsky (1931) in his sociocultural theory, which purport that intelligence can be associated with the process of learning from a more knowledgeable other and thereafter being able to apply the acquired knowledge independently and in different contexts. Vygotsky and his followers (Miller, 1993; Brofenbrenner, 1979; Wertsch & Tulviste, 1992; Phan, 2009) claim that it is in what he calls the Zone of Proximal Development (ZPD) that an individual learns and only in the presence of others—who are more knowledgeable than that individual. Following Vygotsky's view, in the academic context the more knowledgeable others are often conceptualized as agents such as teachers, adults, peers, society and the communication and interactions that take place within the ZPD. Vygotsky assumed that an individual's ability to

learn is also a product of social interactions, with humans and non-humans and with signs and tools.

The findings of this current study which claim that an individual is intelligent when they can learn when they are being taught by an MKO, as well as from their own social and daily experiences, supp ort Vgotsky's theory. Radford (2013) referred to learning as a social and sign-mediated process of becoming acquainted with historical and cultural forms of expression, action, and reflection. Hence, within the ZPD, that is found in an academic context as per the findings of the undergraduate sample, we learn with others who have accumulated knowledge of what has been produced and modified by their prior generations. In other words, learning awakens a variety of internal developmental processes, which can take place only when the individual is interacting with people in his environment. Once these processes are internalized, intelligence thus emerges as a product thereof.

While the undergraduate group findings that are presented and discussed in this section relate to academic intelligence, the current study also found that intelligence is associated with multiple abilities, interpersonal, social and leadership skills. These are discussed further under the next subthemes.

4.2.1.2 *Intelligence is associated with multiple abilities*

This is the second subtheme which was found particularly in the undergraduate group of participants, which speak to intelligence as a categorical construct. It appears that participants at the undergraduate level associate intelligence with the ability to do multiple things including playing different kinds of sport, sing, and design amongst many other things.

The extracts below describe this theme further.

> **Participant 3, Female, 20:** *I do not have a set definition of intelligence or one way I perceive it. However, I believe that an intelligent person is someone that does exceptionally well in whoever field they choose. That does not only have to be anything associated with academics. It can be anything from cooking, playing sport, designing, singing, leading, comedy etc. Thus, for me, being able to identify, understand what you are good at and be able to do that well makes one intelligent.*

> **Participant 6, Male, 19***: Another thing I can say on this subject is that there can be many types of intelligence. I, for example believe that Chad Le Claus is intelligent because he has the ability to think and adapt under water something that another person cannot do. This also goes for Lionel Messi and what he is able to do in the soccer field.*

Participant 3 suggests that intelligence is the ability to do something in an exceptional manner. She further states that this can be any ability other than learning in academic context. Some of the abilities she mentioned are cooking, playing any kind of sport, designing, singing, or making people laugh through entertainment. This therefore suggests that intelligence is not limited to learning and doing exceptionally well academically, but it is associated with learning any skill and developing it to an exceptional level. Furthermore, participant 3's view implies that intelligence is associated with natural talents/abilities that

are not necessarily learnt through an MKO but are rather developed further through exposure to training, or various life experiences. Moreover, she further states that it is also crucial that an individual identifies that they have a natural talent/ ability as this will allow them to then expose themselves to opportunities where they can further develop and enhance these abilities, so that they eventually become exceptional and extraordinary in whatever they are able to do.

Participant 6 clearly states that there are different types of intelligence indicating that this phenomenon is a concept that encompasses different categories and thus can be dissected into many different parts that make the concept whole. He further mentions a famous swimmer, Chad Le Claus, and asserts that this swimmer is highly intelligent based on his extraordinary ability to play sport which is swimming. He also mentions another famous football player, Lionel Messi, and asserts that he is also intelligent is the ability to be extraordinary and exceed all expectations. There are many people who can play soccer and swim all over the world, but participant 6 suggests that what makes this ability a certain type of intelligence, is being able to do this in an impeccable, excellent, and extraordinary way. This can come as a result of training and naturally given ability/ talent which emerges effortlessly in an individual.

The above extracts highlight that intelligence is associated with multiple abilities, and thus intelligence has different types. Howard Gardner's theory of multiple intelligences proposes that people are not born with all the intelligence they will ever have (Gardener, 2011). This theory challenged the traditional notion that there is one single type of

intelligence, sometimes known as “g” for general intelligence, that only focuses on cognitive abilities.

To broaden this notion of intelligence, Gardner introduced eight different types of intelligences consisting of logical/mathematical, linguistic, musical, spatial, bodily-kinesthetic, naturalist, interpersonal, and intrapersonal intelligence. The present findings as outlined above, support Gardner’s claims in his theory of intelligence, that there are various types of intelligence other than academic intelligence which focuses solely on cognitive abilities. Particularly, participant 3, highlights multiple abilities such as designing, playing sport, and singing which refer to Gardner’s spatial, bodily-kinesthetic, and musical intelligence. Furthermore, participant 6 also refers to Gardner’s bodily-kinesthetic intelligence when he highlights players such as Lionel Messi and Chad Le Claus, who both could use their bodies to create products, perform skills, or solve problems through mind–body union in an extraordinary manner. The findings in this present study found that academic intelligence is not the only type of intelligence that exists, and that natural talents/abilities are ultimately other types of intelligence which hold the same importance.

This is consistent with Gardner’s claims that there is no hierarchy of ability, and that what we refer to as academic intelligence holds no greater real-life importance than any of the other intelligences (Gardner, 2000). In a previous study (Mokoena, 2013) where multiple intelligences were studied, logical-mathematical, spatial, and verbal intelligences tended to be the most widely mentioned and acknowledged types of intelligences, however in this current study musical intelligence, bodily-kinetic intelligence and interpersonal intelligences were found to be the most dominant.

4.2.1.3 *Intelligence is the ability to demonstrate social, interpersonal, and leadership skills*

This third subtheme which will be discussed further below describes how intelligence is perceived as the ability to demonstrate different skills that are part of the key aspects in acquiring success in life. These include social, interpersonal, emotional and leadership skills. The extracts below describe how some of the participants in the undergraduate group perceive intelligence as emotional intelligence (EQ).

> **Participant 1, Male, 20***: I am currently involved in an organization called ENACTUS, and there you find a lot of members that are smart as they always get high marks (A's) consistently in all of their modules. However, they are often not good leaders. What I am trying to highlight is that being smart/intelligent academic wise does not necessarily translate to being intelligent in a holistic way. It's just one part of being intelligent. Thus, I would say intelligence involves a mix of different aspects including being smart academically, being able to transfer the knowledge in various practical situations as well as having good leadership skills.*

> **Participant 4, Male, 20:** *In my perception, being intelligent requires social skills. This means that you need to a good communicator and you should be able to make people listen to you and whatever ideas you may bring to the table. Also, you need to be able to solve different kinds of problems. Apart from that I think you need to be able to use your hands in a creative and meaningful way, you need be able to distinguish between what is wrong and right… Emotional intelligence needs to be there, because without it one can never go far in life. Thirdly, a warm, humble and*

loving personality is needed for a person to be intelligent and lastly but not least, social/ relationship skills also need to be there as it is important to be able to relate and communicate well with people.

Participant 5, Female, 21: *You know there is a guy called Eric Thomas, it took him 12 years to finish a 4 - year degree. But what's interesting is that he was an incredible leader. As a result, he was never seen as an intelligent person based on the fact that he kept failing his academic modules, but in actual fact he was somuch intelligent. Also, believe that intelligence is very much linked to an individual's personality.*

Participant 1's views highlight that intelligence is a broad phenomenon that can be likened to an umbrella term that has multiple categories under it. He further emphasizes that intelligence is a concept that needs to be dissected to be understood in a holistic manner. According to participant 1, being smart and excelling academically constitutes as one type of intelligence out of multiple types that exist. Another important factor that this participant highlights in the above extract, is that intelligence is the ability to transfer knowledge to different people and contexts through leadership. This indicates that being able to guide, supervise, motivate, and influence a group of people to achieve a common goal, reflects intelligence. He also suggests that for one to possess a certain type of intelligence they need to demonstrate leadership skills which include empathy, strategic thinking, creativity, and active listening. All these skills require abstract/higher level thinking abilities and are interlinked with cognitive and emotional development.

Participant 4 introduces the idea that intelligence is associated with good social skills. She states that being able to communicate well, command people's attention and influence them, is one way of displaying that one is intelligent. The ability to be creative and ethical was also perceived to be an aspect of intelligence. This once again suggests that the ability to use higher order thinking and to judge social situations appropriately is linked and associated with intelligence. Participant 4 also views emotional intelligence, the ability to recognize one's emotions, and those of others as well as to manage them in an appropriate and positive manner is very crucial and is one of the key aspects in understanding the concept of intelligence.

This participant brings another different aspect which he associates with intelligence. He states that a good personality, which he describes as a warm, loving, and humble. Additionally, this participant also mentioned that having good social and interpersonal skills was also associated with intelligence.

Participants 5's extracts also highlight that intelligence is associated with leadership skills in agreement with participant 1. In his view, he acknowledges that people in general do not associate the ability to lead with intelligence, indicating that this perception is not generally shared across many individuals. Participant 5 also further mentioned that intelligence is inextricably linked with personality, much like participant 4.

The above findings support the ideas that were introduced by Goleman (1995) who asserted that "If your emotional abilities aren't in hand, if you don't have self-awareness, if you are not able to manage your distressing emotions, if you can't have empathy and have effective relationships, then no matter how smart you are, you are not going to get very far".

This suggests that emotional intelligence has direct impact on an individual's ability to lead and ultimately to be successful in everything that they undertake. Further the findings of the current study also found that having good social and interpersonal skills was associated with intelligence. This supports the findings of Beheshtifar and Roasaei (2012) in which they found that social skills represent a broader range of abilities that is most closely linked to the construct of intelligence. They further explained that these social skills that include the ability to express oneself in social interactions, the ability to "read" and understand different social situations, and the knowledge of social roles as proposed by the participants in this study as well.

According to the findings of this study, intelligence is the ability to transfer knowledge to different people and contexts through leadership. This indicates that being able to guide, supervise, motivate, and influence a group of people to achieve a common goal, reflects intelligence. Moreover, for one to possess a certain type of intelligence they need to demonstrate leadership skills which include empathy, strategic thinking, creativity, and active listening. This support the results of Nelson and Low (2003) study which found that leadership skills were associated with different kinds of intelligence, more specifically emotional intelligence and is a very important variable in personal achievement, success, and general life satisfaction.

Through the analysis of the data findings, it was discovered that there were quite distinct differences in the way the participants at the undergraduate level of their tertiary studies and participants at the postgraduate level of their tertiary studies in this sample; perceived the concept of intelligence. This strongly suggests that indeed, there exists certain

demographic differences in the perceptions of intelligence, specifically education level. Below a discussion of the perceptions of intelligence according to the postgraduate participants of the current study are discussed under different subthemes.

4.2.2.1 *Intelligence is a social construct*

The theme that will be discussed under this heading was found in focus group 2 by the older, postgraduate participants. Majority of the perceptions described by the participants at the postgraduate level of study, indicate that the concept of intelligence is socially constructed. They expressed that the way intelligence is perceived is different from society to another society and it also changes from time to time. Below are some of the extracts from the postgraduate focus group discussion that describe this further.

> **Participant 9, Male, 28:** *You know that's a very tricky question mainly because what you could define as intelligence in this community/context could not be defined as intelligence in the next community. Also, what we may have defined as intelligence 10 years ago is not same today and as a result, I don't think what we describe as intelligence today will still be described as intelligence 20 year from now. So, what am trying to say is that it is a social construct. Each and every society constructs it differently. There was a time whereby in some communities a female was never considered intelligent based on their gender, and where a boy was somewhat considered as the only mentally capable person. This is not the case nowadays. Therefore, I believe intelligence is a construct that can never be defined, as it is a social construct that can be defined by a society based on their beliefs.*

Participant 10, Male, 28*: I strongly believe that how we define intelligence depends on how a particular society perceives this construct. I think in some contexts, people abaphiwe ukucula (who are musically gifted) for example, as soon as you talk to the about education and academic related stuff they just zone off, it's almost like you are speaking a language that they don't understand and automatically to them you are deemed as either stupid or not intelligent. However, if you change the educated approach, and talk to them about something they can relate to such as the importance of respect, unity, culture, tradition, love and working together than automatically they see you as an intelligent person. I know a lot of African communities in which this is the case and hence I believe this is a social construct and thus differ across contexts and the norms, values and beliefs of that context or society.*

Participant 9, Male, 28: *I agree, and I think it also depends on who defines intelligence. You find that most of the time the people who define intelligence are academics themselves, and thus the way they define it is always within the academic side of things which does not consider all the other aspects that define intelligence holistically. These academics look at those who are different from them, that is, not excelling academically as not intelligent. To them it's almost like you must fit a certain box or template and when you don't then you don't fall into the intelligent category. Thus, what am saying is that the definition of intelligence that is universal now, is biased and needs to be modified as intelligence is a broader term or phenomenon.*

Hence, I believe that there is someone out there who is way more intelligent that I am but who doesn't even have matric as intelligence is not based on education/ academics.

Participant 1, in the postgraduate group, states that it is almost an impossible task to define intelligence mainly because it is socially constructed. This suggests that it is perceived differently from one context or society to another as indicated by Matsumoto and Juang, 2007: Oppong, 2020). This could be because of many factors including cultural beliefs, tradition, and values. He further states that perceptions of intelligence are not static, and they are constantly changing and adapting according to the times. This then suggests that there can never be one view or perception of intelligence as implied by (Burr, 2015) as long as time is moving, and new developments emerge every day. He further states that each society constructs the concept of intelligence daily, indicating that culture, demographics, and language amongst of other things have a direct influence on how intelligence is constructed and consequently perceived. Furthermore, this participant also mentions that there was a time whereby a female was never considered intelligent based on their gender and because males were seen as superior and thus the only gender that possessed intelligence. He continues to say that this is however not the case anymore.

This therefore suggests that factors such as gender discrimination and socialization previously played a huge role in how intelligence is perceived and as a result transformation that has happened pertaining such factors have influenced how intelligence is perceived at this present time. Additionally, he highlights that individual core beliefs determine how a person perceives intelligence, and because culture encompasses a group of people' beliefs,

each cultural group that exists around the world is likely to have a unison view of intelligence.

Participant 10 also shares the same sentiments as participant regarding that intelligence is constructed differently in different societies. He continues to state that people who are not academically inclined and have never received education, associate intelligence with respect, unity, being cultured, as well as being able to work and relate with people. Additionally, he mentions that he has witnessed several communities who perceive someone that possess these characteristics as intelligent; and believes that this is due to the values, norms, and beliefs of that specific community or broader society.

Participant 9 also agrees with the claims made by participant 10 and further highlights usually, the concept of intelligence is defined by academics, who normally perceive intelligence as the ability to do exceptional in an academic context. He implies that their perception of intelligence has gotten published in multiple books all around the world and has become the only way of defining intelligence. He points out that this definition, does not capture the concept of intelligence holistically and disregards other aspects of intelligence. This further suggests that the concept of intelligence is socially constructed and thus perceptions will always differ according to who defines it. He adds that due to this, there can never be a universal perception of intelligence, however, there needs to be one that can encompass it holistically. Moreover, he suggests that intelligence is not only based on academics but has different types.

Majority of the participants in the postgraduate level group perceive and describe intelligence as a difficult concept that is almost impossible to define mainly because it is a socially constructed. They stated that intelligence is perceived differently from one context or society to another based on factors such as culture, values, beliefs, demographics, and language amongst of other things have a direct influence on how intelligence is constructed and consequently perceived. These findings are in accordance with Zorach (2018)'s conceptualization of intelligence which highlights that individuals and societies define and understand the concept of intelligence in a subjective manner. She furthers states that intelligence is a socially constructed concept as claimed by most participants in this current study. Claims previously made by (Sternberg and Grigorenko, 2004; Matsumoto and Juang, 2007; Oppong 2020) are supported by the findings of this study. They all asserted that the concept of intelligence can never be fully understood or rather, meaningfully be understood outside its cultural context as these are inextricably linked.

Moreover, the findings of the study further highlighted the individual beliefs that determine how a person perceives intelligence, and because culture encompasses a group of people' beliefs, each cultural group that exists around the world is likely to have a particular view of intelligence. These findings provide evidence of various studies that have been done previously which found that different cultural groups around the world perceive intelligence differently due to the different cultural practices, values, beliefs, and language used. Some of these studies (Serpell, 1989; Das, 1994; Yang & Sternberg, 1997; Zengh & Wu, 1994) claimed that in Western societies/contexts in conceptualizing intelligence, much emphasis is placed on high academic achievement, whereas in the African and Asian cultures emphasis is put on an individual's social behavior and practical intelligence that is useful for daily tasks.

Moreover, different subcultures within the African contexts have slightly different concepts of intelligence and this is based on the diversity of the language used and the meaning thereof. For example, in Kenyan language, words such as ngom, luoro, rieko are used to describe their conceptualization of intelligence and interestingly these words have no exact equivalence in the other two cultures (Western & Asian). This was also indicated in this particular study; where participants used words such as “ukuhlakanipha” “ukuphiwa” to describe the concept of intelligence. In the same vein, concepts such as processing speed, which are associated with intelligence in the Western society, are foreign in African cultures and have no equivalence as well. Moreover, in the Asian cultures, their perceptions of intelligence are intertwined with aspects such as religion and morality. This is not the case in both Western and African cultures (Cocodia, 2014). This indicates that there are significant differences in the perceptions of intelligence across societies and consequently, different cultural value and belief system of each society/context will influence people’s notions of intelligence thus making perceptions of intelligence highly interwoven with culture. In further analysis, particularly looking at the distinct views of participants who are African and subscribe to the Zulu culture, and those of participants subscribing to the Colored and Indian ethnic & cultural groups; this was indeed evident in this present study.

4.2.2.2 *Intelligence is both influenced by genetic and environmental factors*

As we further analyzed the data, the above theme emerged. In the postgraduate level focus group, it was observed that some participants perceived intelligence through the neurobiological lenses that believe that intelligence can be acquired through genes and is thus inheritable. Below is a discussion thereof.

Participant 7, Female, 26: *I think that intelligence is a genetic or heritable construct because studies have proven this, and we can also see it in our families whereby generations and generations are either all intelligent or not intelligent.*

However, it's also true that intelligence can be enhanced through working hard and exposing yourself to knowledge, taking on opportunities with an open mind and learning. I also agree that it is a social construct because we may not all be intelligent, but we can all work hard to attain intelligence. One of the things that stand out for me when I hear the word intelligence is that it's not really about getting high marks at school or meeting certain high standards but it's about having broad knowledge of what's happening around you and the world, being aware and not just being in your own bubble.

Participant 11, 24, Female: *I think I was born intelligent because of my genes, but it needed to be molded and shaped in order for it to prosper and thrive, so over the years that's what has been happening. But I have definitely took it from my parents.*

Participant 7 brings a different view that has not been mentioned previously by the other participants. She proposes that intelligence is a genetic and inheritable construct. This suggests that whether an individual's family, including previous generations, is intelligent or not, determines whether than individual will intelligent or otherwise. She also highlighted environmental factors, such as learning and working hard to develop oneself, can also contribute significantly to improving an individual's intelligence, thus giving credit to both genetic and environmental factors.

Her perspective can be described as incremental in a way that she believes that intelligence is not a fixed, static construct. She is not simply describing how intelligence is acquired but also how general skills can be developed which help in both the learning process and the process of manipulating and using knowledge in order to develop intelligence. This is a pure incremental theory in some ways although a role for genetic predispositions is not actively ruled out.

Participant 11 also shares the same views as participant 7 in that intelligence is acquired through genes and through learning or life experiences. It is noteworthy that this unique and distinct view of intelligence is brought forward by female participants in the study; it could be interesting to further investigate whether gender is another demographic difference. Participant 11, further acknowledge that there are other factors that mold and enhance levels of intelligence in an individual. This contrast findings in the study by Beyaztas, Kapti and Hymer (2017), on student's perceptions of intelligence which proclaimed that there are only two ways students generally perceive intelligence. Beyaztas et al (2017) asserted that students either view intelligence as a fixed entity or an incremental entity and never in both ways. In this current study it is evident that student can equally adopt both the fixed and incremental theories in the way they perceive intelligence.

Furthermore, using a biological perspective, her views suggest that intelligence can be inherited from generations to generations in a family bloodline, and lack of intelligence can also be inherited as well. Her views also indicate that there are individuals who are not intelligent based on their genes. (Gray & Thompson, 2004) posit that everyone is born

possessing different types of intelligences suggesting that indeed intelligence is an inheritable construct that can be passed on from gene to gene and from generation to generations. Monozygotic twins raised separately following adoption displayed a correlation of 0.72 for intelligence; that is, one twin's intelligence strongly predicted the other's, despite their different rearing environments. Furthermore, findings in twin studies indicate that there is a strong genetic component to intelligence. The current study's findings are in accordance with the above findings as several participants in the focus group discussion perceived intelligence as a genetic and inheritable construct. They also proposed that this was evidence in the way that intelligent individuals often come from families that are also intelligent, that is, their parents, siblings, grandparents, and previous generations in that bloodline. Visa versa, an individual who is not intelligent often comes from a family that does not display certain types of intelligence as well.

Gray and Thompson further asserted that many environmental factors affect intelligence either favourably or adversely. For example, it was found that prenatal environment affects intelligence, that is, when an individual is still in the womb, and premature birth can impair it. The perceptions of the participants in this current study provide evidence for this as they strongly state and acknowledge that there are many other environmental factors that mold and enhance levels of intelligence in an individual, and suggestively that can also decrease those levels and possibly make them stagnant.

Moreover, the participant's responses indicated that intelligence is partly innate, meaning its genetic and inheritable, however it is also partly environmental, suggesting it can be developed by various kinds of environmental exposure. This is in support of Robert's

(2010) study which found that modern psychologists are also of the opinion that intelligence is partly innate and due to repetition or exposure it can be developed. Therefore, we can say that the capacity of intelligence is both innate and acquired.

4.2.3.1 *Characteristics of intelligence*

During the process of data analysis, the theme 'characteristics of intelligence' was highlighted. It was identified by both groups, that is, the older group of participants, as well as the younger group of participants. Therefore, these characteristics will be discussed further under the next theme.

The following extracts are from focus group 1, which is comprised of the younger participants. These extracts represent their views on the characteristics or the common traits of intelligent individuals.

> **Participant 3, Female,** 19: *For me when it comes to the characteristics of intelligence spirituality is the first, followed by communication/relational skills, emotional intelligence, and the ability to innovate and solve problems.*

> **Participant 6, Male, 19:** *Self- confidence and self-awareness are one of the characteristics. Academically, they must excel, meaning they must be able to do things that have never been done before. …. Respect, understanding yourself, and*

other people is also important. Being able to adapt and adjust accordingly in different situations too.

Participant 1, Male, 20: *Lastly, the characteristics that describe what intelligence is for me would be the ability to be self-aware, learn, be in control of your emotions and understand others emotions as well, being self-less because in my opinion you cannot be selfish and be intelligence at the same time..*

Participant 2, Female, 20: *The characteristics that an intelligent person should possess I think include the ability to multi-task, consistency, honesty and the ability to be trustworthy, also discipline is very important, I think self-awareness is also crucial and lastly I would say the ability to adapt to different changing situations.*

Participant 3 proposes that spirituality is a crucial characteristic of intelligence, and it also precedes all other abilities related to intelligence. This is support of (Emmons, 2000) who argued that spirituality may be conceptualized in adaptive, cognitive–motivational terms and underlies a variety of problem-solving skills that are relevant to everyday life situations. Sing & Sinha, 2013) also found that spiritual intelligence is the central and most fundamental of all the intelligences, because it becomes the source of guidance, for others, integrates all the other types of intelligence and can link our rational and emotional intelligences. This was indicated by participant 3 who further stated that the ability to communicate well with others, manage emotions appropriately, and solve problems are other characteristics of intelligence which only emerge as a result of one possessing spiritual intelligence.

Fundamentally, participants 1,2 & 6 also share the same views as participant 3 as they have listed similar characteristics as well further confirming what previous researchers have declared. However, participants 1,2, & 6 further propose that qualities such as honesty, discipline, respect, trustworthiness and self-lessness are also important and describe intelligence well as opposed to abilities that are linked with cognitive functioning and interpersonal skills. This view reflects that of African cultural groups who essentially perceive mannerism, ethics and good attributes or personal traits as characteristics of an intelligent person according to various studies. Some of those studies include that of (Cocodia, 2014) which found that social skills (interpersonal skills, good social manners and attributes such as honesty, accountability, and social relationships that are maintained successfully) are described as characteristic of an intelligent person in all the African cultures that were investigated, and this may be due to the fact that in Africa there are more extended family systems and the concept of Ubuntu plays a huge role in the value of these social skills. Participant 6 further expresses that achieving or excelling academically is another crucial characteristic that displays intelligence in an individual.

The following extracts are from focus group 2, which is comprised of the older participants. These extracts represent their views on the characteristics or the common traits of intelligent individuals and indicate that there are differences in the way both groups perceive characteristics of intelligence.

> **Participant 9, Male, 28:** *Again, I must say that's a very difficult question, especially looking at the fact that intelligence is a socially constructed term. But regarding characteristics, I think I would say that the ability to manage your household well, the*

ability to make a living and be independent, the ability to contribute to the wellbeing of others, the ability to learn and use that knowledge to improve your life and that of others, the ability to be considerate, relate to other people well and just co-exist with people and nature at large.

Participant 10, Male, 28: *I would say the ability to be manipulative for your own betterment or improvement, the ability to be happy, put yourself first and the ability to do something extraordinarily that can also help others.*

Participant 11, Female, 24: *Having self-control, you know like how to control your emotions and impulses, so they will not cause any harm. For me having self-control is a sign of intelligence because it means you are more likely to think before you speak or act.*

On the older focus group discussion, participants presented different views pertaining to characteristics of intelligence. For instance, participant 9 states that being independent, considerate, with good interpersonal skills, as well as being a provider constitute as characteristics of an intelligent person. In the same vein, participant 10 highlights that being considerate but simultaneously prioritizing your wellbeing all define the character of an intelligent person. This suggest that older individuals are likely to perceive intelligence through characteristic and personality-based lenses. Bradberry and Greaves (2009) claims that an individual who possess emotional intelligence can relate better with different kinds of people and is attuned and considerate of other people's feelings and emotions. It thus appears

from the literature, that emotional intelligence is another type of intelligence that is associated with good interpersonal, social and leadership skills.

The findings have largely supported the notion that the famous "Big Five" personality theory, particularly "Openness to Experience" is positively and significantly correlated with intelligence. Particularly, a study by (Bates & Shieles, 2003), suggested that the nature of this association is that being open to experiences is significantly linked to acquiring knowledge and learning in general. Another perspective on the intelligence-personality link assumes a developmental dependence between the two constructs, such that personality traits influence the degree to which people apply or invest their intellectual abilities. This approach may explain the relatively moderate (0.30 to 0.40) correlation between openness/intellect to experience and cognitive ability.

Through the analysis and findings of the study it is indicated that there are indeed age differences in the student's perceptions of intelligence. It appears that the younger participants generally possess a multiple intelligence perception which can be equated to that of the famous multiple intelligences theory which was introduced by Howard Gardner in the 1980's. It can be deduced that as individuals/students in their late teenage years are most likely to perceive intelligence as a categorical construct, which has many types such as academic, social, emotional, bodily-kinesthetic amongst many others. Furthermore, the findings indicate that as one's age increases/grows older they are likely to comprehend that academic achievement is not the only measure of intelligence, as opposed to when they are younger. Rather, they begin to understand that it is just one type of intelligence amongst many others.

Moreover, the findings from this present study suggest that students in the younger grades generally associate intelligence with working hard to learn and consequently achieve academically which indicate an incremental theory. Many studies conducted to determine beliefs and perceptions about intelligence have focused on whether intelligence is fixed or incremental. Although this study did not focus directly on this point, the students were observed to perceive intelligence as incremental. This is similar with the findings of the study conducted by Makel et al. (2015), in which they investigated the implicit beliefs of students about intelligence and found the same. Interestingly, the findings also presented that the younger students associate spirituality with intelligence. This appears to be influenced by a strong family background pertaining to praying, placing God above everything and the general belief that everything happens because of the higher being and a strong connection one has with God, suggesting that intelligence only emerges as a result of having a strong spirituality.

This view was only adopted by the younger participants who are usually still attached and influenced by their parents and families. This may suggest that students get older, become more independent, and less influenced by their parents and families, they are less likely to associate spirituality with intelligence. The view adopted by younger participants also indicates the younger an individual is, the more likely their views are likely to change and evolve as compared to much older individuals.

The findings present a contrasting view by the older participants who were observed to adopt a different perspective that asserts that intelligence is determined by genetic and

environmental factor however culture play a more critical role in how one perceives intelligence. More interestingly older participants argued that intelligence can never be fully or even meaningfully understood outside its cultural context. They indicated that their perceptions, which posited that abilities such as being able to lead, respect, show discipline, be considerate in everything you do, be independent, use knowledge to improve your life, and provide and take care of yourself and your household indicate or are equated to intelligence. Moreover, they indicated that these perceptions were influenced by their culture, societies they grew in, education, and their general development as individuals as they continue growing and maturing and thus viewing things differently.

The older participants did not categorize intelligence into a certain number of different types that exist as opposed to the younger participants. Rather, they appear to have adopted the theory of social constructionism in the way they perceive and understand the concept of intelligence. As previously stated, social constructionism is of the view that everything people "know" or see as "reality" or a realistic concept such as intelligence is partially, if not entirely, socially situated. Therefore, as the findings of this study suggest, intelligence and perceptions thereof can never be understood in general or even contextual terms based on the fact these differ sparingly in each individual despite those individuals sharing the same culture, beliefs, or context.

4.2.4 Factors that shape the perceptions of intelligence

During the data analysis process the participants highlighted various factors that have influenced, moulded, and shaped their perceptions of intelligence, or what constitutes as

intelligence. This was then identified as a theme and will be discussed further under different subthemes. The first subtheme is discussed below.

4.2.4.1 *Type & level of education*

The level and the kind of education that an individual acquires through their development was considered as one factor that had an impact in terms of how one perceives and understands the concept of intelligence according to the participants. This subtheme will be discussed further below.

> **Participant 2, Female, 20:** *Okay, I believe that I've always been intelligence because ever since I started school, I've always been an A student while also good at different kinds of sports.*
>
> *...In terms of what shaped or influenced my perception of intelligence, I'd say it's the different changing environments. At primary school I learnt that intelligence is associated with getting good grades, and then at high school I learnt that as much as you need good grades you still '[-`need to learn how to relate with people despite the differences that might exist and now in university I've learnt that there are different types of intelligence.*

> **Participant 3, Female, 19:** *Another thing that influenced my perception of intelligence, would be the primary school I went to, because the principal and the teachers there never focused on just academics but they prayed for us a lot and in the process taught us how to pray and how it's importance for an individual. As a result,*

for me, spiritual intelligence is one of the different types of intelligence that is as important, valid, and unique just as the others.

Participant 1, Male, 21: *In terms of what influenced my perception of intelligence, I think it's my experiences as I grew up and the lessons I learnt in the process.*

Participant 2 expresses that her perception of intelligence is influenced by the various environment she has been exposed as she developed and evolved over the course of her life. She indicates that she had a different view and understanding of what intelligence is, when she began her primary schooling, which then evolved and changed as she got to high school and continues to further evolve as she is at tertiary level. From this participant's views, it can be deduced that the development of her perception of intelligence has been shaped by the kind of education she received in the different institutions of education she has gone through.

Further it appears that her perception evolved from an academic intelligence theory which associate intelligence with high academic achievement; to an emotional intelligence theory which believes intelligence is associated with the mastery of social, emotional and leadership skills; and as at present, her perception is like that of multiple intelligences theory which is of the view that intelligence is categorical and thus has many types. Interestingly, this seems to be the latest theory that has been developed in the field suggesting that this perception may be the most dominant one. This finding supports the results of a longitudinal study that was conducted by Wallace, Beyaztas and Hymer (2018) in Turkey, which assessed this, revealed that university students who were doing their first and second year of study, perceived intelligence as a fixed entity, something that one is either born with or not.

Interestingly, when the same students were asked again in their fourth and fifth year of study, there was a significant difference in their perception, as they suddenly hold the view that intelligence is a malleable concept, meaning it can evolve and develop as one gets older.

Beyaztas et al.'s (2016) study which aimed at determining the features of intelligence perceptions according to age, gender, class level and university departments also found that younger students believed intelligence was fixed and could not change, while the older students believed intelligence could be improved as one gets exposed to different experiences in the world further providing evidence of the present findings.

In the same vein, participant 3 also described the kind of education of education she received in the primary school she attended. She explained that her teachers, principal, as well as their type and level of education also consequently influenced how she perceives intelligence in a significant manner. These sentiments support arguments made by scholars such as Falola et al, (2014) who argued that age difference amongst students improves their perception on intelligence in Africa. Falola et al, (2014) also argue that improvement on educational levels which can be viewed by students furthering their tertiary education can contribute towards different and more evolved perception of intelligence as observed in this current study.

Moreover, she states that prayer was emphasized and central to all academic activities at the school, and through that she was taught that spirituality is key to everything including academic achievement which is closely linked with intelligence. Consequently, she asserts that being a spiritual person, and the ability to practice spirituality is, a unique and important

type of intelligence. Participant 4 places importance in the process of learning and the experience and knowledge that comes as a result of one learning, educating themselves and evolving on a continuous basis. Similarly, Shim, Ryan & Anderson's (2008) longitudinal study found that the importance of academic achievement declined over time – as their sample grew older, they endorsed all academic achievement to a lesser degree. This suggests that as individuals get older, and continue with the next level of education, their perceptions regarding intelligence consequently change.

A study conducted by Mokoena (2013) which also investigated students' perceptions of intelligence proposed that age differences in the perceptions of intelligence may be attributed to the fact that the younger generation attains more years of, and superior education than the older groups as observed in this current study. Additionally, Cadwallader (2009) also proposed that shifting intelligence beliefs may echo divergent school policies between year groups or developmental and social life changes. She further asserted that adolescence is a time categorized by rapid changes socially, physically, emotionally, and cognitively and these factors may have a key role in the changes in the perceptions of intelligence witnessed.

4.2.4.2 *Cultural beliefs & practices*

Culture, including beliefs, values, customs, and practices thereof were also considered another factor that played a key role in shaping the way individuals perceive and understand the concept of intelligence. The extracts below provide evidence for this statement.

> **Participant 9, Male, 28:** *I believe intelligence is a construct that can never be defined, as it is a social construct that can be defined by a society based on their*

cultural beliefs…. I think in the western culture especially when it comes to academics, there is that notion that one has to go to school and do certain activities/tasks in order to be intelligence, whereas in the African culture, let's say someone who is an inyanga, they will just work with certain spiritual forces and then boom next thing they can control the weather… For example, in our African culture we have a sangoma that never goes to university to study how to heal people, control the weather etc, whereas in the western way one needs to go to university to study the weather and be able to predict it. Thus, my belief is that we can't say all the abilities that sangomas have do not constitute as some kind of intelligence despite them never going to school or being educated.

Participant 10, Male, 28: *I also agree. I believe this is a social construct and thus differ across contexts and the norms, values and beliefs of that context or society.*

Participant 9 believes that intelligence is a construct that can never be defined due to that each society will perceive and thus define it in a different way based on the type of cultural belief they possess. This suggest that perceptions of intelligence are ever-changing, constantly evolving and thus re-constructed all the time. This also indicates that intelligence is not a stable construct since culture and beliefs thereof evolve over time. Sternberg and Grigorenko (2004) both assert that the concept of intelligence can never be fully understood or rather, meaningfully be understood outside its cultural context as these are inextricably linked. This means that behavior which may be considered intelligent in one culture, may be deemed otherwise in another culture and vice versa.

Furthermore, each culture has its own implicit theories of intelligence, which generally provide an underlying basis that shapes an individual's perceptions of a personal attribute, and as a result a certain word may not represent the same thing in another culture. Like the findings of this current study Zorach (2018) also argued that the ways that individuals, and societies define and understand the concept of intelligence is subjective. According to the findings, intelligence is a socially constructed concept as western people seem to conceptualize is as the ability to solve problems and possess mental skills, while people from African and Asian contexts/societies seem to think it's the ability to adapt to the environment, relate well with others and respect those around you. Participant 9 further makes a distinction between Western cultural beliefs and African cultural beliefs.

He states that individuals in the Western societies typically perceive intelligence as the ability to do well academically and exhibit abstract and logical thinking skills. Whereas in the African societies, individuals generally do not associate intelligence with the ability to learn and do well academically. Rather, in the African context the ability to do something extraordinary such as healing and leading communities is seen as a way of demonstrating intelligence. This could be as a result of the consequences of colonization which prevented African people from receiving education and thus getting the opportunity, to achieve academically. This further ascertain that what one society is exposed to, such as education/lack thereof is likely to influence beliefs and ultimately perceptions such as that of intelligence.

Participant 10 also shares the same sentiments as participant 9 and goes on to further highlight that the norms and values of a particular society/context directly influences

perceptions of intelligence of those individuals that come from those societies. This suggest that if a particular society/cultural group values education and the process of acquiring education and achieving academically is normal and a way of being in that society, members are more likely to associate this with intelligence. Similarly, Fariah and Fontein, (1997) found that students in Europe, a country that is advanced in technology and values education, referred to abstract reasoning, problem-solving, decision-making, and high academic achievement as aspects of intelligence.

Essentially, the present study's findings highlight that if a particular society/cultural group values leadership skills, social and interpersonal skills, respect, discipline and perhaps spirituality, and these characteristics depict the norm in that society, therefore individuals that come from that society are highly likely to associate and perceive intelligence in those lenses. The findings indicate that South African people, particularly those that reside in rural villages conceptualize intelligence as sensible, respectable, and honorable behavior. Moreover, they also view practical skills as interwoven with intelligence. This was found to be the same trend with Chewa people, whose perceptions were also investigated by Serpell in the 1990's. Similar findings were also found in a Kenyan study that highlighted that people who reside in villages generally perceived intelligence in four main way including academic intelligence or smartness, solving problems and thinking logically, being ethical, as well as being able to show respect, be responsible and considerate.

4.2.4.3 *Geographic location / context*

As we know that different cultures and societies around the world are all found in particular geographic location and contexts, the participants also felt that the context an individual is based in for a certain amount of time has a significant role in shaping history, culture, tradition, economics, politics, norms, and perceptions including those pertaining intelligence. Below are extracts that describe this further.

> **Participant 9, Male, 28:** *You know that's a very tricky question mainly because what you could define as intelligence in this community/context could not be defined as intelligence in the next community. Also, what we may have defined as intelligence 10 years ago is not same today and as a result, I don't think what we describe as intelligence today will still be described as intelligence 20 year from now…. For example, if you grew up in a rural area/village like me you will understand that there are people there who are not educated at all, but who are deemed as intelligent merely because in as much as they are not educated, they can easily manage their households, maybe they can easily contribute significantly towards the community through good leadership or social skills, in which they can be appointed as induna or inkosi. These people are uneducated, but the community believes they are intelligent because of what they contribute to the community intellectually rather than educationally or academically…. In terms of what influenced my views, I would say it's my family, friends and the community at large. Also, the environment I grew up in and what I've decided to expose myself into, because you'd find that there's someone that shared the same experiences as you, same school, same community etc however*

they do not have the same level of thinking as you. So hence, what you decide to expose yourself to is critical.

Participant 9 once again dissects the bigger factor, that is culture, by expressing that an individual's geographic location/context is another key influential factor that shapes and directs how one perceives and understands and directs how one perceives and understands the concept of intelligence. He demonstrates his point through highlighting that the specific context one resides in which in his personal case was a rural village as opposed to an urban area plays a significant role in how he perceives intelligence. This suggests that it does not really matter whether two individuals share the same cultural group, for example the Zulu culture, as both these individuals can have totally different perceptions of intelligence based on the exact geographic location/context they reside and were brought up in.

This further indicates that context may be the most vital and significant factor that can shape and influence perceptions of intelligence, further confirming that it is impossible to understand the concept of intelligence outside of context. Moreover, he expresses that even if one exposes themselves to, can be the same as that of the next person, the experience is unlikely to be the same as people have their own mind and way of thinking that' s unique to them and their own cognitive development. Berkeley (2011) also argued that there are differences between the cognitive styles of people raised in the same cultures. He cautions against the simplistic idea that everyone raised in a particular culture will automatically adopt that culture's style of thinking, or that someone raised in one culture will be unable to learn the cognitive style of another This therefore suggests that in as much as culture play a

significant role in how an individual perceives intelligence, different factors still need to all interact together to influence perceptions of intelligence.

4.2.4.5 *Colonization and its after-effects*

Interestingly colonization and the long-lasting impact it made to the nation was perceived by the participants, as another factor that had an influence in how the concept of intelligence has evolved over the years. This subtheme is discussed further below.

> **Participant 7, Female, 26***: As someone said earlier, there is no way the other types of intelligence such as artistry, music etc can be identified through the like intelligent tests that are currently being used worldwide which only base intelligence as academic excellence/ ability. And I think that notion was based on Americans' perspective that largely base intelligence on how well one can excel academically, get a degree, and get a job based on that degree. Unfortunately, this is very biased and only just one way/ aspect of intelligence however it has become the fact.*

> **Participant 9, Male, 28***: I believe there are differences, we are more inclined to defining/perceiving intelligence as the Western people only because we have been colonized in that way but there exist a lot of differences in actual fact…Thus, what am saying is that the definition of intelligence that is universal now, is biased and needs to be modified as intelligence.*

Participant 7, who is a female, expressed her disapproval of the use of intelligent test that are developed in America and consequently adopt the notion of academic achievement in measuring and defining intelligence. She expressed that because these tests are widely used universally, by default, the American/Western perspective on what intelligence is, has become the only perspective that is accepted and is now deemed as the universal truth, while as we have learnt earlier, there can never be a universal way of perceiving and defining intelligence. Studying intelligence in different cultures, as per this study, can thus be a way of challenging conventional Western ideas about intelligence.

This also suggests that studies done in non-Western cultures can be directly useful to people specifically in those cultures and this may thus inform test developers in developing tests that can measure and assess intelligence in relevant and non-bias manner. Participant 9 also expressed that as Africans we have become inclined to defining and perceiving intelligence in Western lenses merely because we have unfortunately undergone Western colonization, and this in her view, has altered South African's perceptions of intelligence. This introduces the notion that even after colonization has ended, African people and their minds continue to be influenced by Eurocentrism and the aftereffects thereof are everlasting and impact perceptions such as those of intelligence.

4.2.4.6 *Parenting style & family beliefs*

This last subtheme that describes how participant expressed that family beliefs as well as the way different individuals' parent their children during the child-rearing period, has a huge influence on how that child will understand and perceive the concept of intelligence as

well as their own level of intelligence as well. This subtheme is discussed in the section below.

Participant 7, Female, 26: *I would agree as well, specifically my household or family. My family influenced me quite a lot. Being 3 girls in the family and that pressure from parents to be educated, knowledgeable, get a degree, a good job and just be independent in order to be deemed as intelligent by them. So, for me I'd say it's my family's influence.*

Participant 11, Female, 22: I *think for me it's the way that I was brought up, life experiences & my family. My mother being the strict woman she was who never allowed me to have friends and she taught be about education which made me to be independent, and I think also moving in with my father and stepmother also further influenced my perception of what intelligence looks like because they never cared too much about academics.*

Participant 9, Male, 28: *For me I would say it's my family, friends and the community at large. Also, the environment I grew up in and what I've decided to expose myself into, because you'd find that there's someone that shared the same experiences as you, same school, same community etc however they do not have the same level of thinking as you. So hence, what you decide to expose yourself to is critical.*

Participant 4, Male, 20: *What shaped my perception of intelligence is the way my grandmother brought me up. She is a teacher and she loved education and thus preached it all the time. However, what strikes me was the fact that when you sat down with her you got to understand that there as more to her than academics. For example, she used to play karate and other exotic sports. For me, I believe karate taught her discipline which I'd say is a characteristic that's also very important when it comes to intelligence. She used to say you cannot be ill-disciplined and be intelligence.*

All four participants whose views were extracted above expressed and asserted that their family, friends, teachers, and larger community in which they grew up, by virtue, played the most critical role through the child-rearing practices they used which were influenced by their own beliefs and adopted parenting styles, in the development of their own perceptions of intelligence. This supports evidence found by Farsides and Woodfield (2003) in their study which highlighted that a mother's praise and positive feedback following academic achievement shaped the student's own perceptions of intelligence tremendously. Interestingly, the same study also found that female students tend to endorse an incremental theory of intelligence which stemmed from the kind of praise and encouragement they received from their parents, which for the most part, focused on their successful outcomes (academic achievement). This was not the focus of this current study however similar findings were presented.

Participants 4, 7 and 11 all described how their parents strongly believed in education and it being a weapon that can help one develop and survive life circumstances. They indicate that their parents taught them the importance of education and consistently placed enormous

value as well as superiority on studying to become educated and ultimately associated this with being intelligent. As a result, they began perceiving intelligence in the same manner too, and studied very hard, to the highest level, to attain education and ultimately intelligence.

Further they expressed that they associate intelligence with these factors, especially academic achievement, mainly because their families praised them and deemed them as wise when they achieved academic success. Things such as being the wise one, having a bright future, being respected as well as given status in the family home were reported as part of the comments given to them by their family members when they did well academically. This confirms findings from a study by (Gest et al ,2005) which also reported similar findings. This thus suggest that family beliefs and the type of child-rearing practices parents use to bring up their children and mould them into adults persistently alters their children's perceptions about various things in life including concepts such as intelligence. Additionally, this confirms that student's perceptions of intelligence are largely socially constructed by those that have the most contact with them.

4.3 Conclusion

This chapter presented the main findings of the present study in relation to the study's objectives, the thematic analysis, the interpretation of the findings as well as discussed, these findings. Themes were developed with reference to the main ideas that emerged from the data. The study sought to establish students' perceptions of intelligence and explore the demographic differences in the way students perceive intelligence, and the data revealed that there are indeed some differences in the way students in their undergraduate level of study

and those in their postgraduate level of study perceive the concept of intelligence. It was found that undergraduate students perceive intelligence using the lenses of the multiple intelligence theory, which argues that intelligence is categorical and thus can be divided into various types such as bodily-kinaesthetic, musical, intrapersonal, interpersonal, and even spiritual intelligence.

Contrastingly, postgraduate students were less concerned about providing their perceptions of intelligence arguing that the concept of intelligence is a socially constructed phenomenon in which perceptions thereof are forever changing and can never be static. They further proposed that culture and context play the most significant role in how an individual perceives intelligence and since these constantly change and evolve due to many effects, perceptions of intelligence cannot be fully understood. Moreover, the students in their postgraduate level of study argued that genetic factors influence an individual's cognitive development, and particularly their manner of thinking, which ultimately interacts with both contextual factors and cultural factors in producing perceptions and overall understanding of the concept of intelligence. In addition, the postgraduate students highlighted more elements of emotional intelligence (EQ) in that they postulated that abilities such as being able to lead, respect, show discipline, be considerate in everything you do, be independent, use knowledge to improve your life, and provide and take care of yourself and your household indicate or equate to intelligence.

The findings also revealed that demographic differences in students' perceptions of intelligence do exist, and the reasons as to why these exist which are also ultimately the factors that shape the student's perception of intelligence. These factors include the type

(including curriculum) and quality of education received by the student, cultural beliefs & practices, geographic location & context, colonization, and its effects, as well as the parenting style and beliefs of their parents, teachers, friends, and larger community. Thereafter, a discussion pertaining to how these factors all interact together to influence, shape, and ultimately produce differences in how students perceive intelligence was illuminated. This discussion revealed how social constructionism plays a significant role in how intelligence is perceived, defined, and ultimately conceptualized in a South African university context which is inhabited by students from different races and backgrounds.

CHAPTER 5: CONCLUSION

5.1 Introduction

This study was conducted for the purpose of exploring and establishing the perceptions of intelligence and whether demographic differences exist in these perceptions amongst the University of KwaZulu Natal student population. After the analysis of the data that emerged, certain conclusion can be made in terms of the research questions of this present study which were outlined in Chapter One. As per the findings that were presented in the previous chapter, conclusions and recommendations were made. Below the summary of the findings is presented.

5.2 Summary of the findings

The study, using a social constructionist paradigm, sought to explore young educated South African student's perceptions of intelligence and whether demographic difference exist as an attempt to contribute to closing the gap that currently exists in the field. Despite the efforts of many theorists in the past who have tried to define and conceptualize intelligence, the literature that was cited in this study highlighted that the concept of intelligence can never be fully understood or rather, meaningfully be understood outside its cultural context as these are inextricably linked. This is because behavior may be considered intelligent in one culture, may be deemed otherwise in another culture and vice versa.

The trends in the literature also encapsulated various implicit theories from different cultures across the world. The Western, Eastern and Asian cultures had somewhat similar conceptions of intelligence which emphasized academic achievement and logical thinking abilities. The empirical evidence from African cultures that had been previously studied,

highlighted that Africans generally perceive intelligence as “sensible behavior”, in which an individual shows respect, obedience, responsibility and is considerate in everything that they do. Service to the family and community and politeness toward and respect for elders were also found to be key in conceptualizing intelligence as seen in (Cocodia, 2014).

The findings of this present study highlighted the implicit theories of intelligence as experienced and understood by South African young adult and educated population. These implicit theories can be understood as mainly resembling the theory of multiple intelligences which was introduced by Howard Gardner in 1983. Majority of the perceptions presented in the study assert that intelligence is a categorical, dynamic, and rapidly evolving phenomenon which encompasses various natural talents that an individual is usually born with which can however also be harnessed in the environment that they reside in. These include bodily-kinaesthetic abilities (playing sport, dancing, acting), musical (composing and singing), intrapersonal (writing, analyzing), interpersonal (counselling, logic reasoning, leading, memory, rational argumentation) and even spiritual intelligence.

As suggested by the participants in the study, intelligence is still largely inborn and thus genetic factors influence an individual’s cognitive development. Further the findings highlighted that culture and context play the most significant role in how an individual perceives intelligence and since these constantly change and evolve due to many effects, perceptions of intelligence cannot be fully understood. Despite this, the findings revealed that the educated South African youth population, generally perceive intelligence as the ability to lead; respect one-self, others, and the larger community; show discipline; be considerate in everything you do; be helpful and humble; be independent; use knowledge and talents to

improve your life; and provide and take care of yourself and your household. These conceptualizations are valid and accepted as socially constructed ideas however they do not fully encapsulate the full extent of human rational thought process and cognitive ability.

Conclusively, demographic differences, particularly education level differences in students' perceptions of intelligence do exist, and there are various reasons as to why these exist which are also ultimately the factors that shape the student's perception of intelligence. These factors include the type (including curriculum) and quality of education received by the student, cultural beliefs and practices, geographic location and context, colonization, and its effects, as well as the parenting style and beliefs of their parents, teachers, friends, and larger community.

5.3 Conclusions drawn pertaining to the research questions

As indicated above, this study sought to answer these research questions:

- To establish what are the students' perception of intelligence
- To establish/explore what shapes these perceptions of intelligence?
- To explore whether there are any demographic differences in students' perception of intelligence and the reasons thereof?

In relation to the first research question, this study thus revealed that there are several views and perceptions of intelligence; and this is tied with the demographic differences in the way students perceive the concept of intelligence. Students with lower educational levels, particularly the undergraduate students, perceive intelligence using the lenses of the multiple intelligence theory, which argues that intelligence is categorical and thus can be divided into

various types such as bodily-kinaesthetic, musical, intrapersonal, interpersonal, and even spiritual intelligence. Whereas students with higher educational levels, particularly postgraduate students, argued that the concept of intelligence is a socially constructed phenomenon in which perceptions thereof are forever changing and can never be static. Moreover, postgraduate students generally perceive intelligence as made up of abilities such as being able to lead, respect, show discipline, be considerate in everything you do, be independent, use knowledge to improve your life, and provide and take care of yourself and your household indicate or equate to intelligence.

With regards to the research question, this study concludes that there are several factors that shape student's perceptions about intelligence include the type (including curriculum) and quality of education received by the student, cultural beliefs and practices, geographic location and context, colonization, and its effects, as well as the parenting style and beliefs of their parents, teachers, friends, and larger community. Importantly, these factors simultaneously account for the demographic differences found within the participants views on intelligence, indicating that the higher the education level of an individual, the more mature and diverse their social construction of intelligence is. Based on the findings the study thus concludes that social constructionism plays a significant role in how intelligence is perceived, defined, understood, and ultimately conceptualized by South African university students.

5.4 Implications for Theory

The present study has provided valuable insight into how young educated South Africans perceive, understand, and ultimately conceptualize intelligence based on their lived

experiences, which has been influenced and shaped by the context unique to us as South Africans.

This study has identified and investigated a problem in the field. The findings presented in this study suggest that there is a huge need for academics and theorists in the field to further use this data in developing a theory of intelligence which will be culturally and contextually relevant to us as South Africans as well as relevant to the modern times we are living in. Since this data was extracted from young South Africans who represent both the present and future context of this country, it is recommended that theorists act swiftly in conducting further research and developing a much needed contextually relevant theory of intelligence. It is highly important and invaluable to understand the concept of intelligence based on the way we construct it and are socialized in our context since there is a mismatch between the way Africans and Western people experience and understand intelligence. This will consequently assist in us developing and producing intelligence tests that are valid, reliable, and contextually relevant for us as Africans.

This is currently a huge need in our country and in the field of psychological assessment/testing, as we are presently using Western tests to understand African experiences. This is very problematic and presents an injustice to many clients that use psychological services. Moreover, it presents ethical implications which have been very much documented previously.

According to Foxcroft (2011) the core ethical consideration facing psychological practitioners in the culturally and linguistically diverse African continent relates to how best

to cater for this diversity to be sensitive to test-takers' cultural backgrounds and values during the test selection, administration, interpretation, and reporting phases of the testing process. Foxcroft (2011) further asserted that it is inappropriate and unethical to use Western-orientated tests in Africa and challenged test developers to develop indigenous tests that can be used.

The likes of (Mpofu, 2002 ; Opoku, 2012; Oppong, 2020) have undertook studies that explored conceptions of intelligence among various groups of African people as well as looked at what an African model of intelligence ought to be; and based on these findings some indigenous intelligence tests using local and contextually appropriate materials and activities were established for example, in the Panga Munthu Test children are asked to make a person using wet clay instead of drawing a person using pencil and paper(Mpofu, 2002). I therefore challenge more academics, researchers, and theorist to use studies like the present one to coin a more contextually relevant theory of intelligence for South Africans and thereafter embark on the task of developing more appropriate and relevant psychometric tools that can be used for users of such services.

5.5 Implications for Practice

Still highlighting the huge need for a contextually relevant intelligence theory for South Africans to improve and advance the field of psychometrics in South Africa, our psychology as Africans as well as educational goals, there are implications for our practice suggested by the study. The findings revealed that one of the factors that influence, shape, and ultimately produce differences in the way students perceive intelligence is the type and

level of education they receive from both schoolteachers and lecturers when they get to tertiary.

Since currently in South Africa, the educational curriculum both at schools and university institutions and the manner it is delivered is largely Westernized, this should be addressed. Firstly, the Department of Education, Independent Schools, and tertiary institutions should decolonize the educational curriculum, including the way it is assessed and delivered, so that it encompasses this diversity students possess and highlights the different types of intelligences that exist. Furthermore, it is also critical for the institutions of higher learning to take responsibility through developing and producing psychological practitioners that will advance the field, develop tests that are contextually relevant and can meet the high demand of new, appropriate, and reliable cognitive assessment measures. Moreover, since majority of these psychological practitioners, who are trained in Western theories, also tend to lecture psychology courses, they often indirectly communicate these in the way they treat and teach students, consequently shaping their perceptions as the findings have revealed.

There currently exist a very limited number of South African universities that have decolonized their curriculum and introduced African psychology in their graduate programs, however even so, African psychology is still an isolated module that is not infused with all the other module that exists in Psychology graduate programs. This is therefore another area that still needs to be addressed for the entire field to remain progressive and relevant.

5.6 Limitations of the Study

Finding data that could thoroughly answer all the research questions proved to be a challenge. As evident in the presentation, analysis, and discussion of the findings the participants did not offer data that could be used to provide a response to all research questions. This therefore limited the study in a significant manner.

Recruiting participants also proved to be difficult. The initial plan was for the researcher to go to lecturing theatres around campus and invite students to participate in the study. Further, the researcher had aimed to recruit students from all the diverse ethnic and racial backgrounds and an equal gender distribution; however, due to time constraints and the ethical approval being obtained towards the end of the year, the researcher did not have the opportunity to do this. At the time Ethical approval from the Humanities and Social Sciences Research Ethics Committee (REC) was obtained, there were no longer lectures, and most students reported that they were busy with thesis submissions and preparation for their final exams.

The small sample of students used significantly limits the ability to generalize findings to the general population, however, the qualitative design used in this study may be used for exploring the students' perception further because of the in-depth and richness of the data it provides.

5.7 Recommendations for further research studies

There is a need for additional research to build a solid body of knowledge and create a clear understanding of how students in the larger South African community perceive and

construct the concept of intelligence. A qualitative longitudinal study with a bigger sample, preferably with students and those that are already working and are thus much older, is required so that the findings could be more transferable to other contexts. Further, the sample could be expanded across several universities to expand the trustworthiness of the results obtained. In addition, since there is currently a lack of South African studying this topic, quantitative studies, such as a survey, that will cover a wider geographic area are highly recommended.

5.8 Conclusion

This study serves to contribute to the body of knowledge regarding the understanding and construction of the concept of intelligence and it anticipates future development of an African based theory of intelligence. The use of qualitative methods facilitated an in-depth exploration of the constructions of intelligence and factors that shaped how it is perceived amongst the student population. The social construction theory allowed for a better understanding of the participants' constructions of knowledge and reality through language and social interaction processes. The constructions of intelligence appear to be embedded in the experiences and social contexts in which the participants live. The results showed that there are variations in the way postgraduate students view intelligence in comparison to the undergraduate students. Further, they also revealed that there are various factors that shape the student's perception and ultimately constructions of intelligence.

CHAPTER 6: REFERENCES

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Appendices

Appendix 1

6 Barkley Place
Scottsville
Pietermaritzburg
3201
22 February 2019

Office of the Registrar
University of KwaZulu Natal
School of Applied Human Sciences
Private bag X01
Scottsville
Pietermaritzburg
3201

Request for student participation in the School of Applied Human Sciences

Dear Registrar

My name is Sinenhlanhla Khumalo. I am a registered student at the University of KwaZulu-Natal, Pietermaritzburg campus. My student number is: 215007341. I am currently doing my Masters in Educational Psychology. I would like to request permission to conduct my study with university students. The topic of my study is as follows: An analysis of age differences in student's perceptions of intelligence at the University of Kwa-Zulu Natal, Pietermaritzburg campus.

I look forward to your response.

Regards

Sinenhlanhla Khumalo

Appendix 2- Poster for recruitment

ARE YOU AN UNDERGRADUATE OR POSTGRADUATE STUDENT WILLING TO PARTICIPATE IN A FOCUS GROUP DISCUSSION ABOUT YOUR PERCEPTION ON WHAT INTELLIGENCE IS?

I am a Masters student in Educational Psychology and I am conducting a study on the perceptions of students on intelligence. I am looking for both undergraduate and postgraduate students (males and females) to participate in a focus group discussion about the above topic. If you are willing to share your views, please kindly send a WhatsApp message on the number below to further discuss time and venue that will be suitable for everyone. Compensation in the form of money for transport will be provided.

0834952870/0834952870/0824952870/0834952870/0834952870/0834952870/0834952870

Appendix 3- Information letter & informed consent form

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL
For research with human participants

INFORMED CONSENT

Note to researchers: Notwithstanding the need for scientific and legal accuracy, every effort should be made to produce a consent document that is as linguistically clear and simple as possible, without omitting important details as outlined below. Certified translated versions will be required once the original version is approved.

There are specific circumstances where witnessed verbal consent might be acceptable, and circumstances where individual informed consent may be waived by HSSREC.

1.9 Appendix 4 - Information Sheet and Consent to Participate in Research

Date: 11 February 2019

Greeting: Hello there

My name is Sinenhlanhla Khumalo from the University of KwaZulu Natal, discipline of psychology, doing her Masters in Educational Psychology. My contact details are as follows: email 215007341@stu.ukzn.ac.za/ 0834952870.

You are being invited to consider participating in a study that involves research on the student's perceptions on intelligence. The aim and purpose of this research is to explore discourses about the perceptions of intelligence in relation to different age groups as well as to understand in depth where these differences stem from. The study is expected to enroll 12 students in total, 6 in each focus group and at the University of KwaZulu Natal, Pietermaritzburg campus. It will involve discussion of the above topic in detail, through a focus group. The duration of your participation if you choose to enroll and remain in the study is expected to be 90 minutes.

The study will provide no direct benefits to participants. However, the study hopes to contribute to the development of an African based theory of intelligence using the study's findings. There are no anticipated risks/ harm in participating in this study.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number_____).

In the event of any problems or concerns/questions you may contact the researcher at 0834952870/215007341@stu.ukzn.ac. or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

Appendix 5 – Invitation to Participate Letter

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Your participation in this research is completely voluntary and you may withdraw your participation at any point. In the event of refusal/withdrawal of participation you will not incur penalty or loss of treatment or other benefit to which you would normally be entitled. However, for order purposes please kindly notify the researcher before leaving the venue.

The only costs that might be incurred by the participant as a result of participation in the stud, is transport cost should they be leaving far from campus. For this reason, each participant will be re-imbursed with R20.

In order to protect the confidentiality of the data, participants will have to sign a confidentiality pledge to avoid sharing the information discussed during the focus group with people outside. Also, pseudonyms will be used to protect the identity of participants. The data will be stored in a locked cabinet at the supervisor's office and kept confidential for 5 years.

Thereafter, it will be destroyed. Also, transcripts and digital reports will be encrypted with a password, and then deleted after 5 years.

CONSENT (Edit as required)

I (Name) have been informed about the study entitled An analysis of age differences in student's perception of intelligence at the University of KwaZulu Natal, Pietermaritzburg campus by Sinenhlanhla Khumalo.

I understand the purpose and procedures of the study.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at 0834952870/215007341@stu.ukzn.ac.za.

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building

Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to:

Audio-record my interview / focus group discussion YES / NO

_____ _____

Signature of Participant **Date**

_____ _____

Signature of Witness **Date**
(Where applicable)

_____ _____

Signature of Translator **Date**
(Where applicable)

Confidentiality Agreement

Research tittle- An analysis of age differences on students perception on intelligence at the University of KwaZulu Natal, Pietermaritzburg campus.

I _____ agree:

1. Not to share any of the information that was discussed within the focus group.
2. Not share any personal details of other participants.
3. Other (specify).

_____ _____ _____

(Name) (Signature) (Date)

Appendix 6- Focus group discussion schedule

FOCUS GROUP SCHEDULE

An analysis of age differences on student's perception of intelligence at the University of KwaZulu Natal, Pietermaritzburg campus.

Duration of the focus group: 90 minutes

Hi everyone, my name is Sinenhlanhla Khumalo and I am a Masters in Educational Psychology student conducting research on the above topic. I will be facilitating this focus group discussion on your perception of intelligence. I am now going to read the following information to ensure that all necessary information about the discussion is communicated.

This is a focus group, which is useful research method for gaining information about a topic in a comfortable environment. As participants, kindly ask you to maintain confidentiality of this discussion and not share the information discussed here with people outside the focus group. Your identity will be kept confidential, and later on I will analyse your responses and report them in my thesis which will be submitted to the School of Applied Human Sciences, Psychology discipline.

Now I would like you to write the name you would like to be called with today on the card in front of you. These are the names that you will be called by today, and they must not be your real name. For transcribing purposes, I ask that you speak clearly and one at a time and that you think about the questions and your answers candidly. Keep in mind that you do not have to answer every question. Before we begin may you please take time the form about your demographics below.

Demographic Information

Please indicate your Age: (19 – 24) (25- 30) (30 and above)

Please indicate your Gender: Female/ Male/ Other

Please indicate your Race:

Please indicate your Marital Status:

Please indicate your current employment status:

Please indicate your current degree:

DRAFT OF FOCUS GROUP QUESTIONS (Warm up questions)

1. Let's begin with doing an introduction, stating one's name and age?
2. Tell me more about yourself?

Key Questions

1. What are you studying and why?
2. What are your plans after graduating?
3. How would you define intelligence?
4. Do you regard yourself as intelligent? Why? /Why not?
5. Do you believe you have always been intelligent? Why?/ Why not?
6. Do you think being smart is the same as being intelligent? Why/ Why not?
7. Do you think an individual with a certain talent/skill is intelligent? Why/ Why not?
8. In your opinion, what influenced you to have the perception of intelligence that you have today?

UNIVERSITY OF vu KWAZULU-NATAL
INYUVESI
YAKWAZUW-NATALI

7 March 2019

Ms Sinenhlanhla Khumalo (SN 215007341)
School of Applied Human Sciences
College of Humanities
Pietermaritzburg Campus
UKZN
Email: 215007341@stu.ukzn.ac.za

Dear Ms Khumalo

2 RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"An analysis of age differences in student's perceptions of intelligence at the University ofKwaZuluNatal, Pietermaritzburg campus. "

It is noted that you will be constituting your sample as follows by conducting interviews and/or focus group discussions with students on the Pietermaritzburg campus.

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire; • gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the Protection of Public Information Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the

Ed

relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

MR SS MOKOENA
3 REGISTRAR

Office of the Registrar
Postal Address: Private Bag X54001 , Durban, South Africa
Telephone: +27 (0) 31 260 8005/2206 Facsimile: +27 (0) 31 260 7824/2204 Email: registrar@ukzn.ac.za
Website: www.ukzn.ac.za

Appendix 8- Referral letter

Student Support Services
Pietermaritzburg Campus
Milner Road
House no. 8

22 February 2019

To Whom It May Concern

My name is Sinenhlanhla Khumalo, I am a registered Masters of Social Science in Educational Psychology student. I am conducting a research study based on the University of KwaZulu Natal student's perception of intelligence. Although the study is not of a sensitive nature, may I please request permission to refer students who might be distressed as a result of the study (focus group discussions) to the Student Support Services.

I would be very pleased if my request can be accepted.

Kind Regards,

Appendix 9 – Ethical Clearance

UNIVERSITY OF KWAZULU.NATAL

11 September 2019

Ms Sinenhlanhla Khumalo (215007341)
School of Applied Human Sciences — Psychology Pietermaritzburg Campus

Dear Ms Khumalo,

Protocol reference number: HSS/0281/019M
Project title: An analysis of age differences in student's perceptions of intelligence at the University of KwaZulu-Natal, Pietermaritzburg campus

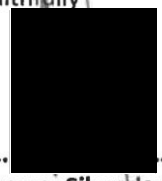
Approval Notification — Expedited Application In response to your application received on 03 April 2019, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 1 year from the date of issue, Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



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Dr Rosemary Sibanda (Chair)

/ms

Cc Supervisor: Dr Phindile L Mayaba cc Academic Leader Research: Professor Ruth Teer-Tomaselli cc School Administrator: Ms Priya Konan

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Appendix 10 – Turnitin Receipt

Submission 1

ORIGINALITY REPORT

12%	11%	4%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	docplayer.net Internet Source	1
2	researchspace.ukzn.ac.za Internet Source	1

3	www.mdpi.com Internet Source	1
4	wrap.warwick.ac.uk Internet Source	1
5	ddl-resources.s3-ap-southeast-1.amazonaws.com Internet Source	1
6	www.kkhsou.in Internet Source	1
7	www.nature.com Internet Source	<1
8	scholarworks.gvsu.edu Internet Source	<1
9	dr.library.brocku.ca Internet Source	<1

10	www.apa.org:443 Internet Source	<1
11	hdl.handle.net Internet Source	<1
12	ink.library.smu.edu.sg Internet Source	<1
13	Robert Emmons. "Is Spirituality an Intelligence? Motivation, Cognition, and the Psychology of Ultimate Concern", International Journal for the Psychology of Religion, 01/01/2000 Publication	<1
14	Rainer Markfort, Patrycjusz Zamorski. "Chapter 13 AI + EI = Future", Springer Science and Business Media LLC, 2020 Publication	<1

15	Yasmine Abtahi, Mellony Graven, Stephen Lerman. "Conceptualising the more knowledgeable other within a multi-directional ZPD", Educational Studies in Mathematics, 2017 Publication	<1
16	Robert Serpell. "25 Intelligence and Culture", Cambridge University Press (CUP), 2000 Publication	<1
17	www.studymode.com Internet Source	
18	eprints.ru.ac.za Internet Source	<1
19	Cocodia, E.A.. "Cultural Perceptions of Human Intelligence", Journal of Intelligence, 2014. Publication	<1
20	www.simplypsychology.org Internet Source	<1

21	citeseerx.ist.psu.edu Internet Source	<1
22	www.bustle.com Internet Source	<1
23	Michela Musto. "Brilliant or Bad: The Gendered Social Construction of Exceptionalism in Early Adolescence", American Sociological Review, 2019 Publication	<1
24	mafiadoc.com Internet Source	<1
25	krishikosh.egranth.ac.in Internet Source	<1
26	www.psicothema.com Internet Source	<1