Risk management as an aid to improve student throughput

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SUPERVISOR'S AUTHORISATION

As the candidate's supervisor/s, I agree to the submission of the thesis.

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Signed: …….....

Date:

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Signed: [redacted]……

Date: 5 January 2025

DECLARATION

I, Rajesh Ramlall, declare that

i) The research reported in this thesis, except otherwise indicated, is my own and original.

ii) This thesis has not been submitted for any other degree or examination at any other university.

iii) This thesis does not contain other person's data, tables, graphs, or any other information unless specifically acknowledged as such.

iv) Where other writer's sources have been quoted, either their material has been re-written and the information attributed to them by reference, or, their words have been used exactly, the writing has been placed inside quotation marks and referenced. No other person's writing has been used unless specifically acknowledged.

v) No text, tables or graphics have been copied and pasted from the internet unless specifically acknowledged, and the source has been detailed in the thesis and in the references.

[redacted]…… 5/01/25……..

R. Ramlall Date

DEDICATION

I would like to thank my wife Sanitha, and my daughters Riya and Dhiya for their patience and assistance over the years to help me complete my studies.

ACKNOWLEDGMENTS

First and foremost, I want to thank the Almighty God for giving me the opportunity, good health, strength, and time to further my study. I would also like to offer my appreciation to the generosity of the following people who contributed to the success of this project.

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Finally, my later sister Dasodha, for guiding and inspiring me during challenging times. I miss you!!

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DEFINITIONS

Risk Management - Risk management is a systematic process of identifying, assessing, and controlling risks that could impact an organization's operations, assets, and objectives. It aims to anticipate potential threats and their impact, and to establish plans to address them.

At-risk Student - At-risk students are defined as students that are at risk of not graduating within the minimum time period allowed to complete a qualification.

Throughput Rates – A throughput rate calculates the number of first-time entry undergraduate students of a specific cohort of a specific year who have graduated either within the minimum time, or up to 2 years beyond the minimum time, to the number of students in the baseline enrolments of that cohort. Throughput rates are reflected in the section on cohort studies.

Dropout Rates – The percentage of students who leave their studies before completing their qualification.

Graduation Rates – The percentage of students who graduated in a particular year.

Success Rates - The success rate refers to the total number of courses passed by students in a given academic year relative to course enrolments. It is calculated by dividing the total number of FTE degree credits (courses completed) by FTE enrolments. These calculations, for a programme or for an institution as a whole, produce weighted average success rates.

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ABSTRACT

The South African higher education system is still challenged by low throughput rates. Despite the phenomenon being examined from various perspectives, the problem still persists. Measures to address the situation has had limited success thus far. The purpose of the study was to explore the use of risk management as a tool to identify and manage the risk of low student throughput rates paying particular attention at the Durban University of Technology.

A case study methodology located within the interpretive paradigm was employed in this mixed method study. The interpretive paradigm enabled the researcher to focus on the individual perspective and experiences. The quantitative participants were second- and third-year students in the Accounting cluster (Durban Campus). Qualitative data was generated through semi structured interviews. Quantitative data was obtained through surveys issued to students. Qualitative data used a purposive sampling technique and quantitative data used simple random sampling. A limitation of the study was that it was based on a single institution.

Based on the findings of the study it is recommended that the university adopt a risk management approach in relation to low throughput rates. In addition, the university should craft an ‘at-risk’ policy that provides specific details on the identification and management of ‘at-risk’ students. The policy should be widely disseminated to all relevant stakeholders.

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION TO THE STUDY

Engagement in various scholarly literature on corporate governance has shed light on the concept of risk management (Institute of Directors, 2009; Banik et al., 2015). Whilst engaging in the material on risk management it dawned on me that the principles of risk management can be aligned to the sporting fraternity, especially with Sir Alex Ferguson, the former manager for Manchester United. Being an avid soccer fan, my all-time favourite team is Manchester United. Having followed the club from my teenage years, their numerous accolades can be attributed to one of the best football coaches ever, Sir Alex Ferguson. During his twenty-six year tenure as manager of Manchester United he won thirty-eight trophies, including thirteen premier league titles, five FA cups and two UEFA league titles making him one of the best managers ever (Elberse, 2013).

The phenomenon of risk management strongly resonates with Alex Ferguson and his role in creating one of the most successful soccer clubs of the 21st century (Terry, 2011). In an interview with Anita Alberse, a professor at Harvard University, Ferguson discussed his leadership approach that helped him achieve success (Elberse, 2013). Upon his arrival at Manchester United in 1986, one of the first things Ferguson did was to create a youth programme which identified young promising players and nurtured their talent. It was a huge risk to bet on youth talent at a time when the prevailing wisdom was that you cannot win anything with kids and newly appointed managers needed to make sure they win in order to survive (Elberse, 2013). However, the risk paid off and some of the greatest players like David Beckham, Ryan Giggs and Paul Scholes came through the youth programme.

Ferguson instilled a culture of discipline, determination and work ethic amongst players. In addition, he provided them with all the technical skills and support needed. He installed Vitamin D booths to ensure that players get sufficient sunlight, employed optometrists and yoga instructors including a world class healthcare facility. He focused on planning ahead so that sufficient talent would be available to ensure United's winning streak was not lost. This process involved cutting players

including some that were loyal veterans with whom he had personal attachments. His focus was always to ensure that there was sufficient talent for the future.

He set high standards and held everyone accountable. He made the team know who was in control. When players challenged his authority or violated the standards they were fined. If they put the team's performance under risk, he dismissed them. In 2005 Roy Keane's contract was terminated for openly criticising his teammates. The following year when United's leading scorer, Ruud van Nistelrooy, publicly displayed his dissatisfaction over being frequently benched, he was swiftly sold to Real Madrid. Being assertive was important, being quick before things got out of hand was imperative. Monitoring and the ability to change was also a key attribute of the manager. He spent many hours observing players. When he noticed changes in a player's habits or lack of enthusiasm, he investigated the reasons and took corrective action. Ferguson instilled positivity and adventure in the team. They were willing to take all the risks to win the game.

The versatility of the concept of risk management has opened up a new dimension in looking at higher education, more specifically student throughput. It is in this perspective that I locate my study. This chapter will provide a background to the study, the rationale for undertaking the research, the research questions and objectives that guide the study, the selection of the theoretical framework as well as the methodology that underpins the study. In addition, the scope, limitations and ethical considerations will form part of this chapter. The chapter concludes by outlining the format of the thesis.

1.2 BACKGROUND TO THE STUDY

One of the critical risks that public higher education institutions face is that of low student throughput. Low student throughput influences various risk categories. Risks are usually classified as strategic, financial, operational, compliance and reputational (Sum & Saad, 2017; APPA Centre for Facilities Research, 2018). Figure 1.1 (modified) provides a diagrammatic representation of various risk categories. Within these categories are numerous sub-risks.

Figure 1.1: Representation of various risk categories

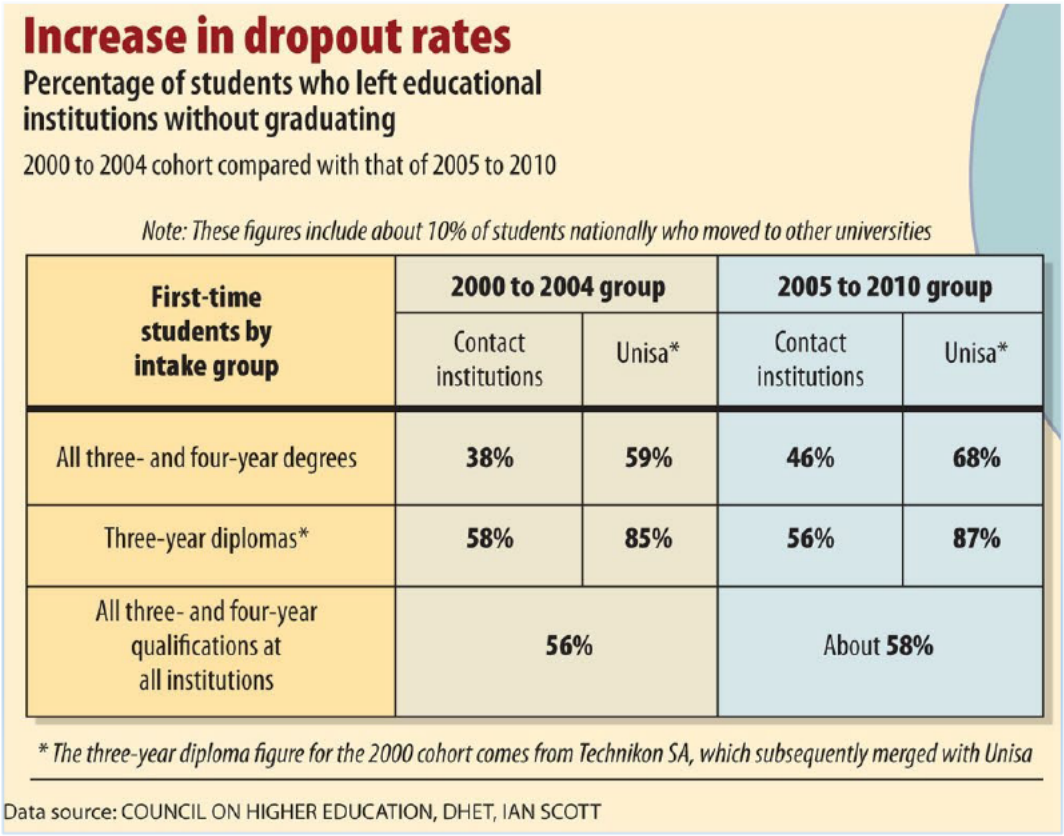
Source: Researchers own construction

Firstly, low student throughput is a strategic risk since it affects whether the university will attain its teaching and learning objectives. Low student throughput can have a huge impact on a universities sustainability (Ngcobo et al., 2024). This is due to the loss of potential revenue from government grants as well as tuition fees. The longer a student takes to graduate, the more it costs the university. In addition, students that dropout also cost the institution thousands of rands in lost revenue (Letseka, 2009). This poses a financial risk. Operationally, low throughput will result in inefficiencies. Consequently, failure to comply with DHET targets as set out in the Higher Education Act of 1997 and other government documents will result in compliance risks. These pose a huge reputational risk to the university (Government Gazette, 1997).

The advent of democracy in 1994 warranted the need for major reforms in South Africa including in the higher education sector. Higher education under apartheid was fragmented and skewed in favour of the white minority. This had to change. The transformation of higher education was vital to the reconstruction and development of the country (Government Gazette, 1997). The Higher Education Act emphasised the need to redress past discrimination and ensure equal access for all. Thus, access became the buzzword for transformation and the focal point of intervention (Bawa, 2019). Interventions ranged from place reservations for admissions, development programmes to increase opportunities for access, support programmes for students that had come into university programmes through alternate access routes and funding opportunities to support their higher education (HE) studies (Akoojee & Nkomo, 2007; Leibowitz, & Bozalek, 2014).

Unfortunately, access did not result in success (Coughlan, 2006). Though participation rates increased significantly, this was not accompanied by increased throughput and graduation rates. A number of institutions reported low throughput rates as well as graduation rates below 15%, yet no record of academic exclusions (Letseka & Maile, 2008; Styger, Van Vuuren, Heymans 2015). This meant that enrolment figures were inflated by students who were repeating the academic programme with little or no prospect of passing (Council on Higher Education, 2001). The Ministry of Higher Education responded by implementing a range of interventions including linking funding with graduate outputs, graduation time frames, targets to increase throughput and graduation rates, and a limit on the number of times a student would be allowed to repeat a course (Ministry of Education, 2001). However, despite these measures, statistics from the Council of Higher Education in 2014 revealed a consistent trend of low throughput and high dropout rates over a period (see Table 1.1) (Council on Higher Education, 2014; John, 2013; Moodley & Singh, 2015).

Figure 1.2: Dropout rates



Increase in dropout rates

Percentage of students who left educational institutions without graduating

2000 to 2004 cohort compared with that of 2005 to 2010

Note: These figures include about 10% of students nationally who moved to other universities

First-time students by intake group	2000 to 2004 group		2005 to 2010 group	
	Contact institutions	Unisa*	Contact institutions	Unisa*
All three- and four-year degrees	**38%**	**59%**	**46%**	**68%**
Three-year diplomas*	**58%**	**85%**	**56%**	**87%**
All three- and four-year qualifications at all institutions	**56%**		About **58%**	

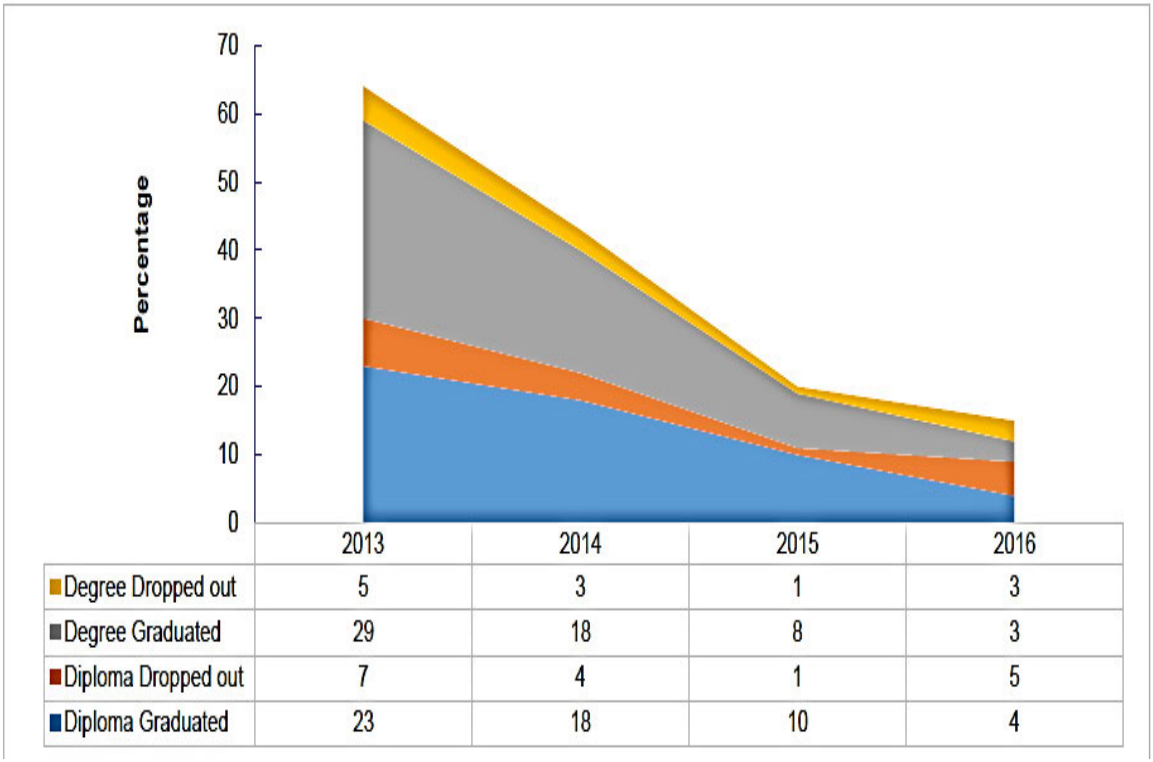
** The three-year diploma figure for the 2000 cohort comes from Technikon SA, which subsequently merged with Unisa*

Data source: COUNCIL ON HIGHER EDUCATION, DHET, IAN SCOTT

Source: Council on Higher Education (2014)

Figure 1.2 provides a comparison of student dropout rates from the 2000 to 2004 cohort and the 2005 to 2010 cohort. The dropout rate for full-time degree students (excluding UNISA) in the first cohort was 38% which increased to 46% in the second cohort. For full time diploma students (excluding UNISA) in the first cohort the dropout rate was 58% which reduced to 56% in the second cohort. The dropout rate for all students (contact and UNISA) in the first cohort was 56% and this increased to 58% in the second cohort. The statistics paint a grim picture of the efficiency of the higher education system.

Moreover, more recent statistics do not paint a rosy picture of the results achieved by the higher education system. A report published by Statistics South Africa in 2019 points to a higher education system that is bottlenecked (See Figure 1.2) (Statistics South Africa, 2019, 2021; Council on Higher Education, 2018).



	2013	2014	2015	2016
Degree Dropped out	5	3	1	3
Degree Graduated	29	18	8	3
Diploma Dropped out	7	4	1	5
Diploma Graduated	23	18	10	4

Figure 1.2: Dropout and graduation percentages for 3-year degrees and diplomas
Source: Statistics South Africa, 2019.
Note: The analysis excludes students from UNISA

The severity of the problem is well-represented statistically. The graph in Figure 1.2 illustrates percentages for student dropouts and graduates for three-year degrees and diplomas. Only 29% of those who registered for the undergraduate degree in 2011 graduated within the expected period, while another 29% took four, five or six years to complete the degree. The rest either dropped out immediately, later, or else, were still trying to complete the degree in 2016 and beyond. Comparable results indicate that of those who enrolled for diplomas, only 23% students managed to graduate within the required period, while 18% graduated within four years, 10% graduated within five years, and 4% graduated within six years (Statistics South Africa, 2019).

Furthermore, of the 145 426 students who graduated in 2009, the majority (39,3%) received bachelor's degrees, while close to 36% received undergraduate certificates and diplomas. By contrast, in 2016, the percentage of those who

acquired bachelor's degrees increased to 46, 2%, while the proportion of those who received undergraduate certificates and diplomas decreased to 26,2% (Statistics South Africa, 2019). The report by Statistics South Africa in 2019 exhibits that a significant percentage of undergraduate students who either dropped out without completing their qualifications or took more than double the minimum time needed to complete their studies.

The above statistics reflect a pattern of consistently low throughput and graduation rates over a lengthy period despite numerous interventions, policy changes and increased funding. The phenomenon of dropout and throughput have been studied from various perspectives such as pre-schooling factors, English as a second language, student academic support, foundation programmes, finance, race, gender, assessments, resources, accommodation issues, first generation students, family, and culture amongst others. These concerns are well documented and will not be engaged with in this thesis. Instead, more recent studies will be examined (Xenos et al., 2002; Bennet, 2003; Araque et al., 2009; Kemper et al., 2020).

In a qualitative study conducted by Moodley & Singh (2015), incorrect career choice, inadequate academic support, and the pressure of being a first-generation student were identified as factors that affect throughput rates (Moodley & Singh, 2015). Meanwhile, Ramrathan (2016) asserts that fundamental transformation in the higher education curriculum may culminate in better throughput rates (Ramrathan, 2016). A few recent studies by Lemmen & Renns (2016) and Lourens and & Bleazard (2016) have focused on the use of predictive analytics or predictive modelling as a tool to reduce dropout and increase throughput and graduation (Lemmens & Henn, 2016; Lourens, 2020). Predictive modelling uses a variety of statistical techniques from historical student data in order to make future predictions. A case study conducted by Lourens and Bleazard (2020) using predictive modelling in the National Diploma in IT, at the Cape Peninsula University of Technology, found that the use of predictive analytics to identify at-risk students early in the study programme, allows for timely interventions to reduce dropout (Lourens & Bleazard, 2016). Lemmens and Renn (2016) concur with Lourens and Bleazard (2016).

However, research in predictive modelling is still in its infancy stages (Lemmens & Henn, 2016; Lourens, 2020).

While numerous studies have been conducted on student throughput, this study takes a different position, it looks at the same phenomenon through the lens of risk management. More specifically, the current study focuses on risk management within the context of student throughput and explores this phenomenon from both an institutional perspective as well as a student perspective. Moreover, findings from the study can be used to create a risk profile for the early identification of at-risk students in higher education institutions. Hence, suitable interventions can be implemented.

Student throughput is affected by various factors and there are multiple perspectives that could come to bear on this phenomenon (Mlambo, 2011; Jain et al., 2018). Hence, selecting a world view regarding this phenomenon is crucial to establishing coherence in the approach to researching the phenomenon of risk management. Case study research and interpretivism are both concerned with discovering human meaning, therefore this paradigm is well suited for this study (Harrison et al., 2017).

1.3 STATEMENT OF PURPOSE

The purpose of this study is to explore the use of risk management as a tool to identify and manage the risk of low student throughput rates.

1.4 RESEARCH OBJECTIVES

a) Examine the current policies and academic processes in place relative to student throughput.
b) Determine the current risks relating to student throughput.
c) Determine suitable interventions that can be implemented to mitigate the risk of low student throughput.

The overriding purpose of the study is to find solutions to combat the extremely high failure and dropout rates by managing risks, effectively. To arrive at such solutions, it is necessary to understand the major risks in the study context; to assess how risk

management tools, techniques, processes, decision-making and values can alleviate throughput and to strategise a way forward.

1.5 RESEARCH QUESTIONS

The study will be guided by the following research questions:

a) What are the current policies and academic processes in place relative to student throughput?
b) What are some of the current risks relating to student throughput?
c) What suitable interventions can be implemented to mitigate the risk of low student throughput?

1.6 RATIONALE FOR THE STUDY

The rationale for choosing this study was threefold, namely, the personal reasons for choosing the study, the contextual reasons and highlighting the gaps in the current literature.

1.6.1 Personal reasons

Being a lecturer in a public higher education institution for over twenty years has exposed me to the low throughput and high dropout rates in the higher education system. The pressure to increase throughput rates is ongoing. Despite the various interventions implemented to change the situation, the problem persists. This study will provide me with an understanding of how I, as a lecturer, might be able to mitigate the challenges of high dropout rates and low throughput rates within my higher education institution.

1.6.2 Contextual reasons

The contribution of higher education towards the economic and social needs of South Africa is of paramount importance. The realisation of the urgency and importance of meeting this need resulted in a significant amount of funding and other resources being allocated to the higher education sector. However, the return on this investment has been deficient (Statistics South Africa, 2019). Despite the increase in student access, success rates remain low as the higher education sector remains plagued by low throughput and graduation rates.

Though many studies have been conducted in this area over the years, little seems to have changed. The introduction of various interventions like developmental programmes, student support, extended curriculum programmes, peer to peer mentoring and academic writing centres by universities, have had limited success. By examining this phenomenon through the lens of risk management, fresh perspectives and solutions may be discovered to contribute to this discourse. My experience as a lecturer in Auditing inspired my interest in finding ways to ensure that larger numbers of students enjoy success in their studies. The more student success is achievable, the greater the chances of the social and economic transformation in South Africa. My position allows me to explore the concept of risk management in higher education, more specifically within the area of throughput, and graduation, so that relevant theoretical, practical and policy implications can emerge.

1.6.3 Gaps in the current literature

Despite there being a plethora of research on student throughput and dropout, there is very little scholarly research that examines student throughput through the lens of risk management. This study will contribute to the body of knowledge on throughput by highlighting the use of risk management as a tool to aid student throughput.

1.7 THEORETICAL FRAMEWORK

A theoretical framework can be described as the lens through which you view your study. It is a structure that uses knowledge from research already conducted in the specific field, to make sense of the data in your own research study (Kivunja, 2018). Osanloo concurs with this adding that the theoretical framework is the ‘blueprint’ for one’s study that serves as a guide on which to build and support your study. Findings from ones research can be used to support, extend or modify the theoretical framework used (Osanloo & Grant, 2016).

1.7.1 King 111 Code on Corporate Governance

The King 111 Code on Corporate Governance provides the blueprint for this study, informs the purpose of this study, the research questions, the research objectives,

the literature review, methodology and methods. Following the collapse of international companies like Enron and Parmalat, new legislation and codes of conduct were introduced to strengthen corporate governance. International investors also raised concerns about the Johannesburg Stock Exchange (JSE) listed companies with inefficient structures. Hence, a commission of enquiry, headed by Judge Mervyn King, was established to probe the reasons for local company failures and to make suitable recommendations (Mans-Kemp et al., 2016; Langeni, 2018). This culminated in the King Codes on Corporate Governance. The Department of Higher Education adopted the principles of the King Code through the publication of the Regulations for Annual Reporting by Public Higher Education Institutions (Department of Higher Education and Training, 2003, 2007, 2014; Institute of Directors 1994, 2004, 2009).

The King 111 Code on Corporate Governance applies to all entities, profit orientated or not. The Regulations for Annual Reporting by Public Higher Education Institutions (2014), which is adapted from the King 111 Code (2009) places onerous reporting and disclosure responsibilities relating to risk management. In addition, it introduces the concept of academic risk, which relates to any risk relating to throughput graduation rates and success rates amongst others (Department of Higher Education and Training, 2014; Institute of Directors, South Africa, 2009). The King 111 Code on Corporate Governance, which provides the theoretical lens of the study, will be discussed in greater detail in Chapter Three on the theoretical framework. The selection of the research participants and the research site will be discussed next.

1.8 SELECTION OF RESEARCH PARTICIPANTS AND RESEARCH SITE

This study will use an interpretative epistemology and a mixed methods research approach. The methodology is a case study. The qualitative participants were purposively sampled management and lecturers. The quantitative participants were second- and third-year students in the Accounting cluster (Durban Campus). Qualitative data was generated through semi structured interviews. Quantitative data was obtained through surveys issued to students.

1.9 METHODOLOGY

A case study methodology located within the interpretive paradigm was employed in this mixed method study. The interpretive paradigm enabled the researcher to focus on the individual perspective and experiences. The quantitative participants were second- and third-year students in the Accounting cluster (Durban Campus). Qualitative data was generated through semi structured interviews. Quantitative data was obtained through surveys issued to students. Qualitative data used a purposive sampling technique and quantitative data used simple random sampling.

Data collected from these methods were eventually coded, categorised and organised into themes. The data, which was presented in the form of vignettes and organised under themes, was subjected to a first level of narrative analysis (that also involved a discourse analysis), followed by a relational analysis (second level) that analysed key findings from the narrative analysis. The third level of analysis was a theoretical analysis that subjected the key findings (which was part of the relational analysis) to further analysis by linking the key findings with the theoretical framework. By subjecting the data to three levels of analyses it contributed to the thick description of data by providing more facts and empirical content (Henning et al., 2004).

The research pilot study of quantitative surveys was examined for reliability using the Cronbach Coefficient Alpha Test for the validity component. For the qualitative pre-testing, participants were interviewed using semi-structured interviews. None of the participants used for the pre-testing were used for the actual data collection. A pilot study was undertaken to examine participants' understanding of the research instruments before conducting the main research. Moreover, the pilot study was done to test whether the respondents would be reluctant to answer the survey, ask for clarification, and general feedback. A sample size of 35 quantitative surveys were issued to second- and third-year students. The pilot study employed the purposive sampling technique as it was vital to obtain feedback from respondents that have experience and knowledge regarding the study. The purposive sampling technique ensured appropriate testing of the questionnaire and the necessary revisions were made prior to conducting the main study.

Credibility was obtained by ensuring that all research questions were linked to the literature and interviews, the receipt of an ethics clearance letter and the creation of an audit trail. Transferability was achieved by debriefing participants prior to interviews. Recordings of interviews were stored for a period of eight weeks to ensure dependability. The services of an accredited transcriber was used to transcribe recorded interviews thereby minimising researcher bias.

Ethical considerations were also followed by obtaining IREC approval from UKZN (Annexure A) as well as a gatekeeper's letter from the DUT (Annexure B). Confidentiality was maintained throughout the study. To neutralise the power relationships between the research participants and the researcher an informal approach to the interviews were adopted, which enabled the co-creation of meaning between the researcher and the research participants regarding the phenomena pertinent to the study. Palaganas et al. (2017) claim that rigor and the quality of research is deepened when qualitative researchers are transparent about the limitations of their studies (Palaganas et al., 2017).

1.10 PARADIGM SELECTED

The study will be conducted using the interpretative paradigm. A paradigm is simply a belief system (theory) that guides the way we do things. A paradigm influences how one sees the world, it defines one's perspective, and shapes one's understanding of how things are connected (Cohen, Manion, Morrison, 2017; Guba & Lincoln, 1994). The choice of interpretive paradigm is relevant to the study because it enables an in-depth probing during interviews so as to get deeper insight into the phenomenon under study and other hidden issues related to throughput and graduation. Crucial to the interpretivist philosophy is that the researcher has to adopt an empathetic stance. The challenge here is to enter the social world of our research subjects and understand their world from their point of view (Kivunja & Kuyini, 2017; Saunders, Lewis, Thornhill, 2009).

1.11 SIGNIFICANCE OF STUDY

The study will benefit top management at higher education institutions by aiding them in implementing a holistic risk management approach towards the

management of low student throughput. Heads of department and lecturers will be able to understand and implement their responsibilities in respect of the identification and treatment of 'at risk' students. Finally students will be able to determine whether they are at risk of failing and seek the necessary academic support.

1.12 LIMITATIONS OF STUDY

Despite endeavouring to make a contribution towards the use of risk management in managing student throughput several limitations were identified:

- The study was based on a single institution and the findings are limited to this institution.
- The study was only confined to the Accounting Cluster, which included the departments of Financial Accounting, Auditing, Tax and Management Accounting. As such, these findings cannot be generalised to other departments.
- The study only focused mainly on lecturers, academic support services and assessments in relation to management of student throughput.

1.13 DUT THROUGHPUT AND DROPOUT RATES

The tables below present the throughput and dropout rates for the cohorts of first-time entering students in 2017, 2018 and 2019 at the Durban University of Technology. These only relate Accounting Cluster (Departments of Financial Accounting, Auditing, Tax and Management Accounting).

Table 1.2: Cohort for first time entering students for 3-year programmes for 2017

	No. of first time entering in 2017	No. Graduated in			No. enrolled in 2022	No. Dropped out	Dropout Rate	Throughput rate			Still in progress
		2019	2020	2021				Min Time	Min time +1	Min time + 2	
DUT	5954	2297	1096	464	154	1943	33%	39%	18%	8%	3%
A&I	1641	642	353	156	44	446	27%	39%	22%	10%	3%

Source: DUT Management Information System

Table 1.2 presents the number of first-time entering students for the 2017 cohort for the DUT as well as the Faculty of Accounting and Informatics. From an institutional perspective, 5954 entered the cohort in 2017. Out of this, only thirty-nine percent (2297) completed within minimum time. Eighteen percent (1096) students took one additional year to complete while 8 percent (464) of students took two additional years to complete. Three percent (154) students were still completing their qualification in 2022. Thirty-three percent (1943) of students dropped out of the system. From a faculty perspective one thousand six hundred and forty-one entered the cohort. Out of this only thirty-nine (642) completed within minimum time. Twenty-two percent (353) of students took one additional year to complete while ten percent (156) of students took two additional years to complete. Three percent (44) students were still completing their qualification in 2022. Twenty-seven percent (446) of students dropped out of the system.

Table 1.3: Cohort for first-time entering students for 3-year programmes for 2018

	No. of first time entering in 2018	No. Graduated in.		No. enrolled in 2022	No. Dropped out	Dropout Rate	Throughput rate		Still in progress
		2022	2021				Min Time	Min time +1	
INST	5855	2191	1427	458	1779	30%	37%	24%	8%
A&I	1652	623	497	95	437	26%	38%	30%	6%

Source: DUT Management Information System

The above table presents the number of first-time entering students for the 2018 cohort for the DUT as well as the Faculty of Accounting and Informatics. Five thousand eight hundred and fifty-five students entered the cohort in 2018. Out of this, only thirty seven percent (2191) completed within minimum time. Twenty four percent (1427) of students took one additional year to complete while eight percent (458) were still in progress in 2023. Thirty percent (1779) of students dropped out of the system. From a faculty perspective, one thousand six hundred and fifty-two students entered the cohort in 2018. Out of this, only thirty eight percent 38% (623) completed within minimum time. Thirty percent (497) of students took one additional year to complete while six percent (95) of students were still in progress in 2023. Twenty six percent (437) of students dropped out of the system.

Table 1.4: Cohort for first-time entering students for 3-year programmes for 2019

	No. of first time entering in 2019	No. Graduated in 2021	No. enrolled in 2022	No. Dropped out	Dropout Rate	Throughput rate Min Time	Still in progress
INST	6276	2636	2264	1376	42%	42%	22%
A&I	1720	859	581	280	50%	50%	16%

Source: DUT Management Information System

The above table presents the number of first-time entering students for the 2019 cohort for the DUT as well as the Faculty of Accounting and Informatics. From an institutional perspective, six thousand two hundred and seventy-six students entered the cohort in 2019. Out of this, only forty-two (2636) percent completed within minimum time. Twenty two percent (2264) of students were still in progress in 2023. Forty two percent (1376) dropped out of the system. From a faculty perspective, one thousand seven hundred and twenty students entered the cohort in 2019. Out of this, only fifty percent (859) completed within minimum time. Sixteen percent (581) of students were still in progress in 2022. Fifty percent (280) of students dropped out of the system. The above tables paint a bleak picture relating to throughput and dropout rates. The low throughput rates within minimum time represents a huge financial loss to the institution. In addition, there are massive dropout rates which seems to be increasing over the years. This indicates that whatever measures are currently in place to increase throughput rates are ineffective.

The tables below present the throughput and dropout rates for the 3-year programmes in the Accounting Cluster (2017 -2019). The Auditing and Tax department has the highest throughput rates within minimum time (64%) followed by Department of Management Accounting (48%) and the Department of Financial Accounting (41%). The dropout rates for the above departments are fifteen percent (15%), nineteen percent (19%) and twenty six percent (26%) respectively.

Table 1.5: Cohort Study of First-time Entering Students of 3 Year Programmes for 2018

Department and Qualification	No. First-time Entering 2018	Graduated in:		No. Enrolled in 2022	No. Dropped out	Dropout Rate	Throughput Rate		Still in Progress
		2020	2021				Min Time	Min Time + 1	
Auditing and Taxation	**171**	**89**	**41**	**3**	**38**	**22%**	**52%**	**24%**	**2%**
ND: INTERNAL AUDITING	85	52	13	2	18	21%	61%	15%	2%
ND: TAXATION	86	37	28	2	19	22%	43%	33%	2%
Financial Accounting	**217**	**78**	**76**	**9**	**54**	**25%**	**36%**	**35%**	**4%**
ND: ACCOUNTING	217	78	76	9	54	25%	36%	35%	4%
Management Accounting	**179**	**75**	**54**	**11**	**39**	**22%**	**42%**	**30%**	**6%**
ND: COST AND MANAGEMENT ACCOUNTING	179	75	54	11	39	22%	42%	30%	6%

Source: DUT Management Information System

The Auditing and Tax department has the highest throughput rates within minimum time (52%) followed by Department of Management Accounting (42%) and the Department of Financial Accounting (36%). The dropout rates for the above departments are twenty-two (22%), twenty-two percent (22%) and twenty-five percent (25%) respectively.

Table 1.6: Cohort Study of First-time Entering Students of 3 Year Programmes for 2019

Department and Qualification	No. First-time Entering 2019	Graduated in 2021	No. Enrolled in 2022	No. Dropped out	Dropout Rate	Throughput Rate Min time	Still in Progress
Auditing and Taxation	**178**	**103**	**49**	**26**	**58%**	**58%**	**15%**
DIP: INTERNAL AUDITING	110	59	35	16	54%	54%	15%
ND: TAXATION	68	44	14	10	65%	65%	15%
Financial Accounting	**253**	**125**	**75**	**53**	**49%**	**49%**	**21%**
DIP: ACCOUNTING	224	110	67	47	49%	49%	21%
ND: ACCOUNTING	29	15	8	6	52%	52%	21%
Management Accounting	**185**	**108**	**53**	**24**	**58%**	**58%**	**13%**
ND: COST AND MANAGEMENT ACCOUNTING	185	108	53	24	58%	58%	13%

Source: DUT Management Information System

The Auditing and Tax Department as well as the Management Accounting Department has a throughput rate within minimum time of fifty-eight percent (58%) while the Department of Financial Accounting's is forty-nine percent (49%). The dropout rates for the Auditing and Tax Department and the Management Accounting Department is fifty-eight percent (58%) while the dropout rate for the Financial Accounting Department was forty-nine percent (49%).

The statistics presented for the Accounting Cluster also paints a bleak picture in terms of throughput rates and dropout rates. One can conclude that the phenomenon of low throughput and high dropout rates seem to be pervading throughout the institution. The statistics presented above provide a glim picture

relating to student throughput and dropout rates. The low student throughput rates and high dropout rates represent a huge loss of potential revenue. It is evident that the interventions in place to manage this situation have not been effective and the implementation of a risk management process maybe an effective aid to manage this risk.

1.12 STRUCTURE OF THE THESIS

Chapter 1 introduced the study, providing a background and context of the study, outlining the research questions, providing an explanation for selecting the research participants and the research site and briefly explaining the purpose, rationale, theoretical framework of the study, methodology and limitations of the study.

Chapter 2 provides a critical review of the literature on risk management and student throughput.

Chapter 3 explains the theoretical framework, which involves unpacking the various components of risk management.

Chapter 4 explains the methodological orientation of the study. It describes the sampling strategy, the methods of collecting the data, the procedures for displaying and analysing the data, the ethical considerations and limitations of the study.

Chapter 5 discusses the quantitative data analysis collected through surveys issued to students.

Chapter 6 explains the qualitative data analysis collected from various levels of management using semi-structured interviews.

Chapter 7 contains the conclusion and recommendations of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The first chapter presented a background to the study, contextualising the study focus and research questions. In this chapter, I focus on a critical review of literature that frames the phenomenon of risk management related to student throughput within higher education institutions. While there has been a substantial amount of research on student access, throughput and at-risk (Severson et al., 2007; Aina et al., 2022), this study takes a different perspective of these issues related to higher education students. The vantage point taken in this research is that of risk analysis. As such, the literature reviewed includes risk management as it relates to both corporate governance in higher education, as well as on student risk analysis across the levels of higher education governance and responsibilities. The chapter commences with an engagement on global perspectives on student access, followed by an engagement on higher education in pre and post-apartheid South Africa, the concept of risk and risk management. The chapter concludes with a discussion on student throughput and current interventions and risks from a South African perspective.

2.2 A GLOBAL PERSPECTIVE ON STUDENT ACCESS INTO HIGHER EDUCATION

The 21st century has witnessed a global increase in the number of persons accessing higher education (Altbach, 2013; Akalu, 2016; Noui, 2020; Schofer et al., 2021). Many reasons can be attributed to this phenomenon. First, as part of the social justice agenda in many countries, the previously disenfranchised can now claim their right to education. These individuals include the economically disadvantaged, the disabled as well as women. This has been achieved partly by lowering admission entrance and reservation of spaces for the discriminated (Altbach, 2007; Altbach et al., 2019; Papa, 2020). The increase is also due to new patterns of funding, the lowering of standards and the introduction of new legislation. Increased student populations may also be ascribed to the fact that a nexus exists between higher education and improved health, empowerment, economic, and social development (Organisation for Economic Co-operation and Development,

2008; Liu et al., 2021). It is imperative that higher education institutions plan to ensure that there are adequate resources (infrastructure, staff and technology) for the increase in student numbers (Asiyai, 2022). The diversified student body has resulted in the need to implement new systems for academic support and new methods to teaching and learning (Rowan et al., 2027). Many of the global challenges relating to rising student numbers also bears resemblance to South Africa (Christie, 2008). In the South African context, tertiary student numbers have been rising since the dawn of democracy in 1994 (Kaburise, 2014). Higher education has long been seen as a panacea for poverty and since the vast majority of South Africans were denied access to education, they needed to attain workplace skills to participate in the labour market (Brown & James, 2020; Mckay, 2023). However, the South African higher education system could not cope with the increase in student numbers due to resource shortages (universities, staff, technology, finance) (Spaull, 2013). As a response, the government introduced free undergraduate qualifications for qualifying students (Van der Bank & Nkadimeng, 2014; Masutha & Motala, 2023). As student populations rose, the academic system at universities started to take strain. Huge class sizes, inadequate teaching resources and other shortages made the delivery of effective tuition difficult (Taylor, 2011). This, together with the low entrance requirements, resulted in low throughput rates and an increase of at-risk students. Thus, the increase in access has, unfortunately, not resulted in a proportional increase in success (Mohamedbhai, 2014; Ramrathan & Pillay, 2015).

2.3 SOUTH AFRICA: HIGHER EDUCATION UNDER APARTHEID

Understanding the South African higher education landscape prior to and post-apartheid is important as it displays the extent to which the South African education system was skewed in favour of the minority white population prior to 1994, and how South Africa's higher education system post 1994 was already at-risk due to the huge numbers of the population that wanted to now enter the higher education system, the vast majority of which were not fluent in the English language (Bunting, 2006; Spaull, 2013). The higher education system under apartheid was controlled by the National Party. The National Party government was the architect of apartheid, whose policies were designed to protect white Afrikaner supremacy (Peters, 2004;

Seekings, 2020). During this era, there were thirty-six institutions of higher education differentiated between universities and technikons, all of which were race based. Nineteen institutions were for Whites, two for Coloureds, two for Indians and six for Africans (Bunting, 2006). There were also six institutions in the TBVC (Transkei, Bophuthatswana, Venda, Ciskei) countries used almost entirely by Blacks. Institutions were not allowed to register students from other race groups unless the course they wanted to study was not offered by their race institution (Reddy, 2004).

Differentiation between Universities and Technikons was another way for the government to further disintegrate the racially divided higher education system (Netswera & Mathabe, 2006; Jansen, 2023). Universities and Technikons were distinguished based on the activities they could perform. In essence, universities were to be involved with science and knowledge creation (scholarly activities) while technikons were concerned with technology and knowledge application. White institutions had much greater access to resources than their Black, Coloured and Indian counterparts.

2.4 SOUTH AFRICA: HIGHER EDUCATION POST 1994

The advent of democracy in 1994 warranted the need for major reforms in the country. The transformation of higher education was seen as part of a wider process of political, economic and social transformation aimed at equity (Department of Education, 1997; Badat, 2010; Du Preez et al., 2016). The Higher Education Act of 1997 put forward the need for a unified and diversified higher education system that was equal and efficient (Government Gazette, 1997; Badat, 2015; Smith, 2020). The White Paper on the Transformation of Higher education echoed similar sentiments (Department of Education, 1997). This opened the door for all race groups to enter a unified higher education system. In 1994, Africans constituted forty percent (40%) of all postsecondary students, even though they comprised seventy-seven percent (77%) of the population. White South Africans on the other hand made up forty eight percent (48%) of all postsecondary students, yet they comprised eleven percent (11%) of the population. In contrast, by 2011, black students accounted for eighty one percent (81%) of South Africa's postsecondary student population (938 200), nearly double that of 1994 (Alim, 2014).

One of the mechanisms used to address the deficiencies of the apartheid higher education system was a series of mergers and incorporations (Badat, 2015; Rensburg, 2020). The thirty-six higher education institutions pre-apartheid were reduced to twenty-three. These comprised of eleven research universities, six comprehensive universities (one distance) and six universities of technology (Badat, 2010). However, most of the merged universities still had the same amount of campuses, thus having little to no impact on the number of students that could be enrolled. However, where former white universities were merged with former black universities a conundrum was created. Previously, white universities had high admissions criteria compared to their black counterparts. This needed to be addressed in the merged university. The implementation of an alternative admissions strategy was seen as a way forward (Mabokela & Wei, 2017). Thus, a university could have different sets of criteria based on race. Lowering of admission criteria to suit the goal of inclusiveness created a situation where some potential students could already be at-risk of failing (Glass et al.,2021)

With the South African Constitution guaranteeing equal access to education for all and the proposal by the National Commission on Higher Education (1996) to massify the higher education system, there was an unprecedented increase in the number of students accessing higher education (Africa, 1996; National Commission on Higher Education, 1996). By 1997, higher education enrolment saw an increase of almost fifty two percent (52%) compared to 1993. In terms of race, by the year 2000, seventy-three percent (73%) of the students in public higher education institutions were black compared to fifty-two percent (52%) in 1993 (Nieuwenhuis & Sehoole, 2013; Cooper, 2015; Mabokela & Mlambo, 2017). Though university access has improved significantly for black South Africans, this has not necessarily translated into equitable and timely graduation (Bunting, 2006; Akoojee & Nkomo, 2007; Department of Higher Education and Training, 2019). A consequence of the massified higher education system was a decrease in throughput and graduation rates.

The problem of low student throughput and dropout was first highlighted in the National Plan for Higher Education (Ministry of Education, 2001; Rossouw, 2001). It

stated that on average twenty percent (20%) of students dropped out annually. In the case of first year students, the average dropout was twenty-five percent (25%). This amounted to an annual loss of R1.6 million rands in government subsidies (Rossouw, 2001; Akoojee & Nkomo, 2007). Consequently, a number of strategies were implemented to address this risk. These included the introduction of a new funding formula linked to graduate outputs, time frames and targets to be achieved in respect of throughput, success and graduation rates (Steyn & De Villiers, 2007; Styger, 2014). In 2005, the Department of Education reported that of the 120 000 students who enrolled in higher education in 2000, 36000 (30%) dropped out in their first year of study. A further 24 000 (20%) dropped out during their second and third year. Of the remaining 60 000, 22% graduated within the specified three years duration for a generic Bachelor's degree (Letseka & Maile, 2008). Consequently, the Department issued a public statement lamenting that the dropout was costing the National Treasury R4.5 billion in grants and subsidies to higher education institutions without a commensurate return on investment (Letseka & Maile, 2008; Moodley & Singh, 2015). It is evident that if the vision of the National Development Plan is to increase the throughput rate for degree programmes to more than 75 percent by 2030 in order to address the shortage of skills and promote social mobility, much more has to be done in order to address the risk of students dropping out (MacGregor, 2014; Maluleka & Ngoepe, 2018).

Recent statistics published by Statistics South Africa (2019) indicated that only twenty nine percent (29%) of those who registered for the undergraduate degree in 2011 graduated within the expected period, while another twenty nine percent (29%) took four, five or six years to complete the degree. The rest either dropped out immediately, later, or were still trying to complete the degree in 2016 and beyond. Comparable results indicate that of those who enrolled for diplomas, only twenty-three percent (23%) of students managed to graduate within the required period while eighteen percent (18%) graduated within four years, ten percent (10%) graduated within five years, and four percent (4%) graduated within six years. These statistics reflect a pattern of consistently high dropout and low throughput and graduation rates over a lengthy period despite numerous interventions, policy changes and increased funding.

While numerous studies have been conducted in the area of student throughput and success, this study takes a different position, as it looks at the same phenomenon through the lens of risk management. By taking this stance, an alternative view of student throughput, from a risk management perspective is provided. This opens up an opportunity to explore other solutions to manage this problem.

2.5 THE CONCEPT OF RISK

The concept of risk is not contemporary. It is a subject that has been in existence for decades (Douglas, 2020; Siegrist & Árvai, 2020). However, there is no agreed definition for risk. Different sectors have their own language for risk. For example, in the world of insurance, risk is commonly referred to in terms of hazard and exposure. In the share trading industry, terms such as speculation, market risk and volatility are associated with risk (Outreville, 1998; Dladla, 2020).

There seems to be a misconception between the terms risk, uncertainty and exposure. Risk is predominantly defined in probabilistic terms. The most famous definition of risk is by Frank Knight who believed that the probability of something occurring could be determined using logic (like the throw of a dice) or statistical analysis (Knight, 1921). According to Knight, probabilities are objective. Knight defined uncertainty as situations where one could not know all the information needed in order to set accurate odds in the first place. Bernstein asserts that probability is the key to the management of uncertainty (Bernstein & Bernstein, 1996). Scoones adds that uncertainty occurs when we are not aware of the probabilities of either likelihoods or outcomes (Scoones, 2019).

Knight (1921) also distinguished between measurable uncertainty and unmeasurable uncertainty. He viewed measurable uncertainty as risk and unmeasurable uncertainty as uncertainty. Put differently, risk relates to objective probability and uncertainty to subjective probabilities (Feather, 1959; Aven & Reniers, 2013). Risk and uncertainty are linked, the greater the uncertainty, the greater the risk (Brown & Damery, 2009). Uncertainty is a state of not knowing whether a proposition is true or false. Probability is often used as a metric of uncertainty, but its usefulness is limited. At best, probability quantifies perceived

uncertainty. However, critics of Knight argue that his definition does not address exposure. In addition, if one views risk as subjective, then Knights definition does not bear relevance. Knight only views risk as objective probabilities (Bartesaghi et al., 2012). A final criticism is that Knights definition is very narrow and is mainly appreciated in the fields of economics and insurance (Knight, 1921; Holton, 2004; Scoones, 2019).

2.6 THE CULTURE OF RISK

Culture can simply be described as attitudes, beliefs, values and assumptions shared by a group of people (Matsumoto, 1996; Spencer-Oatey, 2008). The culture of an organisation can be viewed through three basic levels at which it manifests itself i.e. observable artefacts, values and basic underlying assumptions (Spencer-Oatey & Franklin, 2012). This is illustrated in Figure 2.1 below. Observable artefacts include anything from the company layout, dress style, tone of speech and financial statements to company records. These visible artefacts help us understand how a company creates it environment and what behaviours they exhibit but fails to show why employees behave the way they do. We can then look at the values that guide individuals to determine their behaviour but values are difficult to observe directly. Sometimes, one may even conduct interviews to determine why people behave in the way they do. But this too may not reveal the real reason for their conduct (Spencer-Oatey & Franklin, 2012). To really understand culture we need to delve into the underlying assumptions which determine how people think and feel. These assumptions are in fact learned responses that originated as adopted values. But, as a value leads to a behaviour, and as that behaviour starts to solve the problem which prompted it in the first place, the value is slowly transformed into an underlying assumption about how things really are. As the assumption is increasingly taken for granted, it drops out of awareness.

Taken-for-granted assumptions are so powerful because they are less debatable and confrontable than espoused values. We know we are dealing with an assumption when we encounter in our informants a refusal to discuss something, or when they consider us insane or ignorant for bringing something up. For example, the notion that businesses should be profitable, that schools should educate, or that

medicine should prolong life are assumptions, even though they are often considered mere values. Simply put, values can be divided into non-debatable, taken-for-granted values, which we call assumptions or debatable, espoused values which we term values.

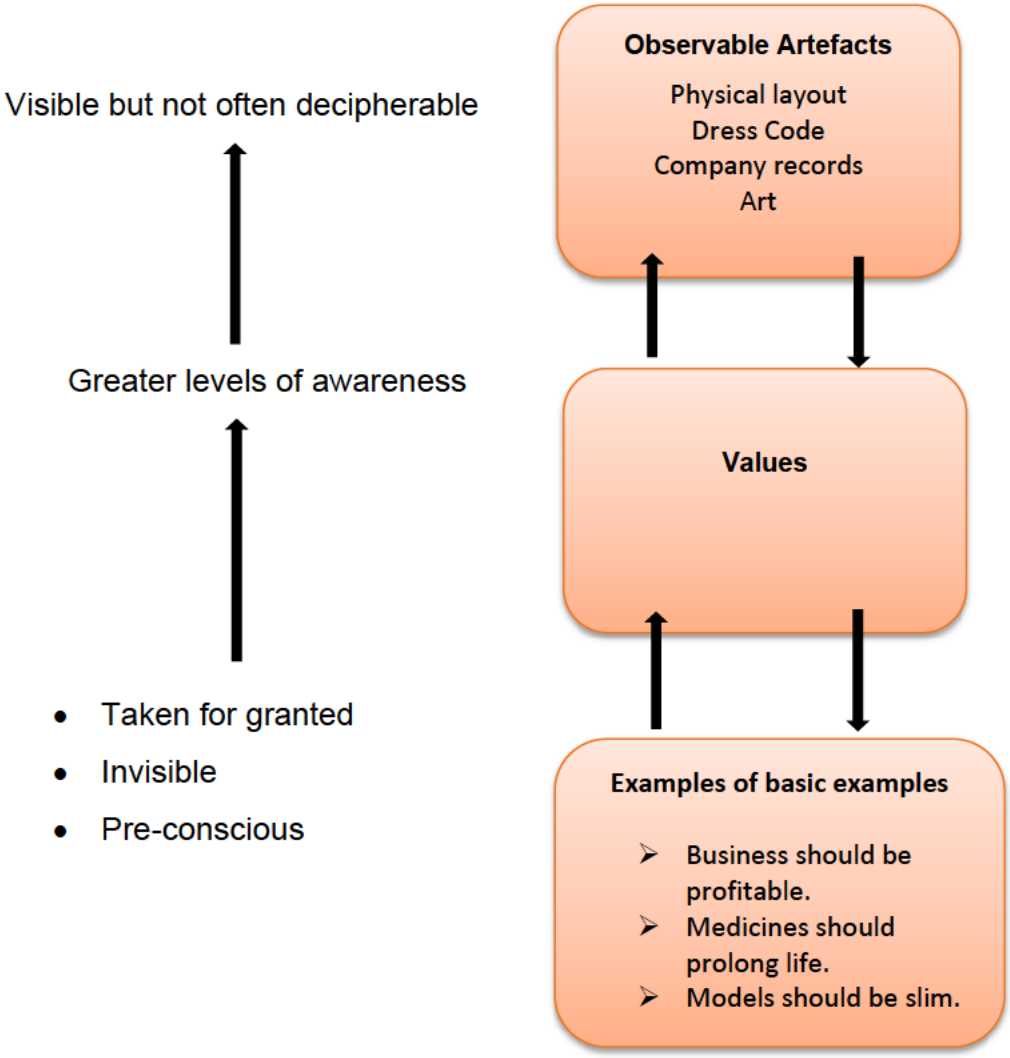


Figure 2.1: The levels of culture and their interaction

Source: Adaption of Spencer-Oatey & Franklin (2012, p.4).

Figure 2.1 depicts the different levels of culture in an organisation. Institutional culture, by extension, relates to the attitudes, values, beliefs and assumptions within a higher education institution (Patton, 2023). A strong institutional culture is imperative in achieving the strategic objectives of a university (Azeem et al., 2021).

Thus, it is important for employees at all levels to be aware of an institutions value system so that they can think and behave in line with this culture. Repeated behaviour is a hallmark for the successful implementation of institutional culture (Ababneh, 2021). Institutional culture hugely affects organisational performance and is vital in ensuring compliance with codes of conduct, creating motivation and guiding employees thinking and action (Ahmed & Shafiq, 2014).

Risk culture is a subset of institutional culture, with a focus on all aspects relating to risk (Ring et al., 2016; Graham et al., 2022). The Enterprise Risk Management Initiative Faculty defines risk culture as a system of values and behaviours present in a company that influence risk decisions of management and employees (North Carolina State University, 2022). The Institute of Risk Management South Africa defines risk culture as the values, beliefs, knowledge and understanding relating to risk that is shared by a group of people within an organisation. Faqih (2022) adds that a consistent behaviour pattern is imperative in promoting a strong risk culture (Faqih, 2022). A strong risk culture helps prevent events that can affect the achievement of an institutions mission, thereby improving operational efficiency and performance. To achieve this, it is imperative that an institution has a coalescing approach to risk and a high degree of accountability for it. In contrast, a weak culture highlights divisions in behaviours and poor accountability for decisions taken (Suleman et al., 2021). Ultimately, an organisation's risk culture will determine whether the organisation will create and protect value or not (Saeidi et al., 2021). The 2008 global financial crisis highlighted the lack of an organisational risk culture as a key contributor towards company collapses. A strong and supportive risk culture is imperative for the success of risk management (Fraser et al., 2016; Ring et al., 2016; Blair et al., 2024).

In addition, the presence of a disciplined decision-making culture is vital. A disciplined decision-making culture is where people apply their mind carefully with focus and intention prior to making a decision (Grover & Kemp, 2023). This decision-making culture affects decision making at all levels within an organisation from strategic decisions to routine day to day business decisions. Disciplined decision making does not mean that no risk is taken, but that decisions which are outside the

institutions defined risk appetite is avoided. Simply put, decisions that will result in risks exceeding reward should be avoided. If one accepts that the goal of risk management is to ensure that business decisions are made to achieve company objectives, then a strong risk-aware culture is a necessary condition for the success of risk management (Institute for Risk Management South Africa, 2012; Fraser & Simkins, 2016; Braumann et al., 2020).

Since a strong risk culture is essential to the success of risk management, measuring risk culture in an organisation is equally important (Power et al., 2013; Hubbard, 2020). There is, however, some debate about whether risk culture is objective or subjective in nature (Hansson, 2010; Pietrocola et al., 2021). However, most of the literature on risk culture leans towards the objectivist view. There are some models and metrics that have been developed to objectively measure risk culture. For example, in the UK, the Institute of Risk Management developed the "Risk Culture Aspects Model" that includes criteria such as the attitude of top management, governance, proficiency and decision making (Institute for Risk Management South Africa, 2012). However, if culture is affected by repeated behaviours, the attempts to influence organisational culture will focus on those behaviours (Spencer-Oatey & Franklin, 2012). Therefore, culture can also be viewed as subjective (Institute for Risk Management South Africa, 2012; Ring et al., 2016). Stafford et al., (2021) concurs with this and adds that the discipline of risk culture actually contains a mixture of quantitative and qualitative elements. To truly understand risk culture, both the finer elements such as behaviour and attitudes, and the harder aspects of traditional risk management need to be viewed holistically (Ring et al., 2016; Johal, 2019; Baker et al., 2021).

Building a strong risk culture requires time, repeated behaviour and inspiration. Belluz (2008) states that it is important to obtain clarity about institutional objectives, strategies, roles and responsibilities in order to embed a risk management culture. She adds that institutions must determine their risk appetite and tolerance. The author also argues that if risk is defined as the uncertainty around the attainment of objectives, it implies that risk and performance are linked. Therefore, institutions need to understand the connection between the factors that affect performance and

risk. Johal (2021) concurs with this and adds that a key driver in embedding a risk culture in any institution is vision. He adds that an assessment of the current risk culture should be the starting point in attaining a desired risk culture (Belluz, 2008; Johal, 2019). One of the best ways to embed risk culture in an institution is through the use of risk champions and risk workshops (Fraser & Simkins, 2016). Risk workshops provide practical risk scenarios that employees try to solve. In other words, employees learn by doing. This has proven to be far more effectual than speeches or talk shops (Fraser et al., 2021).

Risk culture starts at the top of an institution. Management actions and consistent, ongoing communication around ethics and risk management are the first steps to instilling a risk culture. Management should also encourage an atmosphere of openness and discussion so that employees are able to share their concerns as well as learn from others. Stafford asserts that some of the factors that indicate a good risk culture include management's attitude towards risk, accountability, effective communication to all stakeholders, and incentives to employees who promote a good risk culture (Financial Stability Board, 2014; Baker et al., 2021). University councils have a crucial role in promoting a strong risk culture (Olssen, 2021). This can be done by being transparency and promoting accountability. In addition, Council should encourage frank discussions and differences of opinion as part of the decision making process (Shore & Wright, 2003; Dzimińska et al., 2020).

The Institution for Risk Management in South Africa has developed a Risk Culture Framework to analyse, plan and help influence risk culture within an institution. Figure 2.2 depicts this framework.

Figure 2.2: Risk culture framework

At the lowest level, each person's own personal beliefs towards risk contributes to their attitude in an institution. Every individual has their own personal experiences which shape their beliefs and attitudes towards risk. Individuals risk attitudes can vary from being risk aggressive, risk neutral or risk averse. These risk types play a role in shaping the risk culture of an institution.

Institutions also need to be aware of the personal ethics of employees in the institution. Each individual has their own moral values which can influence their daily decision making, which in turn influences the risk culture of the institution. An individual's personal attitude towards risk and their personal ethics will in turn shape their behaviour at work. Their values, beliefs and attitude towards risk inevitably influences the overall risk culture in an institution.

2.7 RISK MANAGEMENT AND HIGHER EDUCATION

Chapter One introduced the concept of risk management as well as its importance and relevance to higher education. It also briefly discussed the adoption of the principles of the King Code by DHET (through the publication of the Regulations for Annual Reporting by Public Higher Education Institutions). This section expands on this.

In 2003, the Department of Education published the Regulations for Annual Reporting by Public Higher Education Institutions, with amended versions in 2007 and 2014 respectively. Public Higher Education Institutions enjoy substantial freedom (Nixon, 2020). It is therefore imperative that adequate and effective systems of governance and management are prevalent at these institutions, to account, to both internal and external stakeholders. The Reporting Regulations (2003) provided a framework for minimum standards of reporting by universities. It included the following pertinent stipulations with reference to risk management (Department of Education, 2003):

- An individual/committee that identifies all potential risks, their likelihood of occurring, its impact as well as the interventions that should be implemented to mitigate these risks.
- The maintenance of a risk register were all risks confronting the institution should be contained. The register should be regularly updated.
- The scope of the duties of risk management within the institution must be clearly defined. The individual/committee responsible must report to the Audit and Finance Committees and through it to the Council.
- A report on risk exposure and its management.

The 2007 Regulations contained no new amendments relating to risk management, in comparison with its predecessor. However, the 2014 Regulations incorporated numerous amounts of information relating to student enrolment and throughput as well as risk management. It introduced the concept of academic risk, defining it as any risk relating to enrolment (throughput and graduation), quality of teaching,

research and accreditation of institutional qualifications. Further stipulations included that:

- Every institution must have a strategic plan and an annual performance plan. The annual performance plan must include information about the total number of students registered, the number of first-time registrations as well as throughput and graduation rates.
- An annual institutional risk register must be maintained. The register should contain details of all potential risks, their likelihood, impact and the interventions in place to mitigate the risks.
- The university council is ultimately responsible for the governance of risk. Council needs to recognise that the institutions strategy, risk, performance and sustainability are entwined. All strategic objectives contain risk, if these risks are not properly managed, it will affect the performance of the institution and ultimately, its sustainability.
- Executive Management (Vice Chancellor) is responsible for effective management and administration of the institution. The responsibility for risk management and risk based internal auditing forms part of executive management's duties.
- The annual report of a higher education institution must include a performance assessment report, the vice chancellors report on management and administration, a report on risk management and a statement by council on governance and sustainability.
- Council is required to give an opinion on the effectiveness of the institutions risk management process, as well as, disclose the system that is in place to support this opinion. This should be subject to independent and objective reviews. In addition, council has to disclose that:
- There are no current, imminent or future risks that may affect the sustainability of the institution.
- There is a separate risk committee. If there is no such committee, clarification must be provided as to which committee will be assigned responsibility for risk management.

- There is an audit committee which is independent. Both the internal and external auditors should have unrestricted access to the audit committee. The audit committee must, at least annually, review the internal auditor's assessment of risks and approve the internal audit plan to ensure that audits are appropriately conducted to mitigate the risks identified.

The requirement that higher education institutions comply with the Annual Reporting Regulations is evidence that higher education institutions and risk management are conjoined. The National Development Plan, as quoted by the *White Paper for Post-School Education and Training: Building an Expanded, Effective and Integrated Post-school System,* outlines three main functions of universities. The first is to educate the nation within relevant skills for the job market, the second is to develop new knowledge and the last is to create opportunities for social upliftment (National Planning Commission, 2010).

The use of words such as new knowledge and new applications indicates that universities are primarily concerned and involved with the uncertain and unknown. This concern and involvement simultaneously constitutes the core concept of risk. Thus, the reason for the existence of higher education institutions is imbedded in risk (Purdy, 2010; Wessels & Sadler, 2015). However, Raanan asserts that the concept of risk management is missing from most universities. Sum and Saad (2017) concur with this and adds that universities view themselves as ivory towers, immune from disruptions in the world (Tufano, 2011; Raanan, 2008; Sum & Saad, 2017). The reality though is that all organisations, including universities are exposed to risks (Masama, 2017; Sum & Saad, 2017).

Risk management is not another layer of bureaucracy. It is an effective tool to manage risks and help achieve an entity's strategic objectives. All strategic objectives contain risk, which if not managed effectively impacts on performance and ultimately sustainability. In the environment that universities currently operate, where economic models are challenged by rising costs and future government funding is uncertain, this approach provides a competitive edge (Sum & Saad, 2017; Kozlova & Snegurenko, 2019; Sityata et al., 2021). Moloi adds that in the South

African context, risk management is gaining attention as universities are pressurised from stakeholders such as government and regulators, to develop risk management frameworks in order to manage risks confronting universities (Moloi, 2016). The Regulations for Annual Reporting by Public Higher Education Institutions discussed above is evidence of this (Moloi, 2016).

2.8 THE RISK MANAGEMENT PROCESS

An organisation's risk management process should involve the systematic application of policies, procedures and practices to the activities of communicating and consulting, establishing the context and assessing, treating, monitoring, reviewing, recording and reporting risk (Hillson & Simon, 2020). The main purpose of the risk management process is to enable the organisation to assess the existing or potential risks that may be faced, evaluate the risks by comparing the risk analysis results with the established risk criteria and treat such risks using the risk treatment options. The organisation should use these criteria in the decision-making process (Aven, 2016). This study will be guided by the Risk Management Process issued by the International Organisation for Standardisation in 2018 (International Organisation for Standardization, 2018). The risk management process includes establishing the context, risk identification, risk analysis, risk evaluation, risk treatment, communication and consultation, recording and reporting and monitoring and review.

2.8.1 Risks and interventions relating to throughput

Student throughput has been a major concern for South African universities and other stakeholders in the past two decades. Despite a range of interventions, some of which has helped, efficiency in the system continues to pose a risk (Ministry for Education, 2001; Department of Higher Education and Training, 2013). However, if institutions want to attain the ambitious plan proposed by the National Development Plan of increasing the undergraduate throughput rate to more than 75% by 2030, much more needs to be done (National Planning Commission, 2010).

Though throughputs have steadily increased over the years, a careful analysis of statistics reveals that many students do not complete their studies within regulation

time. A review conducted by DHET in 2019, using the 2010 cohort revealed some alarming statistics. As per the study, only 22% of students completed their three-year undergraduate degree within minimum time. Of the balance, 39% completed within four years and by year six only 56% had completed their degree. These statistics confirms, as alluded to above, that our higher education sector lacks efficiency (Department of Higher Education and Training, 2019). It is evident from the above, that despite the interventions implemented, throughput remains a huge risk.

Despite a plethora of research into low throughput and dropout, spanning nearly four decades, much remains unknown. Many theories and models have been developed to explain the dropout process. Some of these include Spady (1970), Bean (1982) and Bean and Metzner (1985). One of the first models to be developed in the area of student dropout and throughput was developed by Vincent Tinto (Tinto, 1975; Tinto et al., 1993). Figure 2.3 provides a diagrammatic representation of Tinto's 1975 model on student departure.

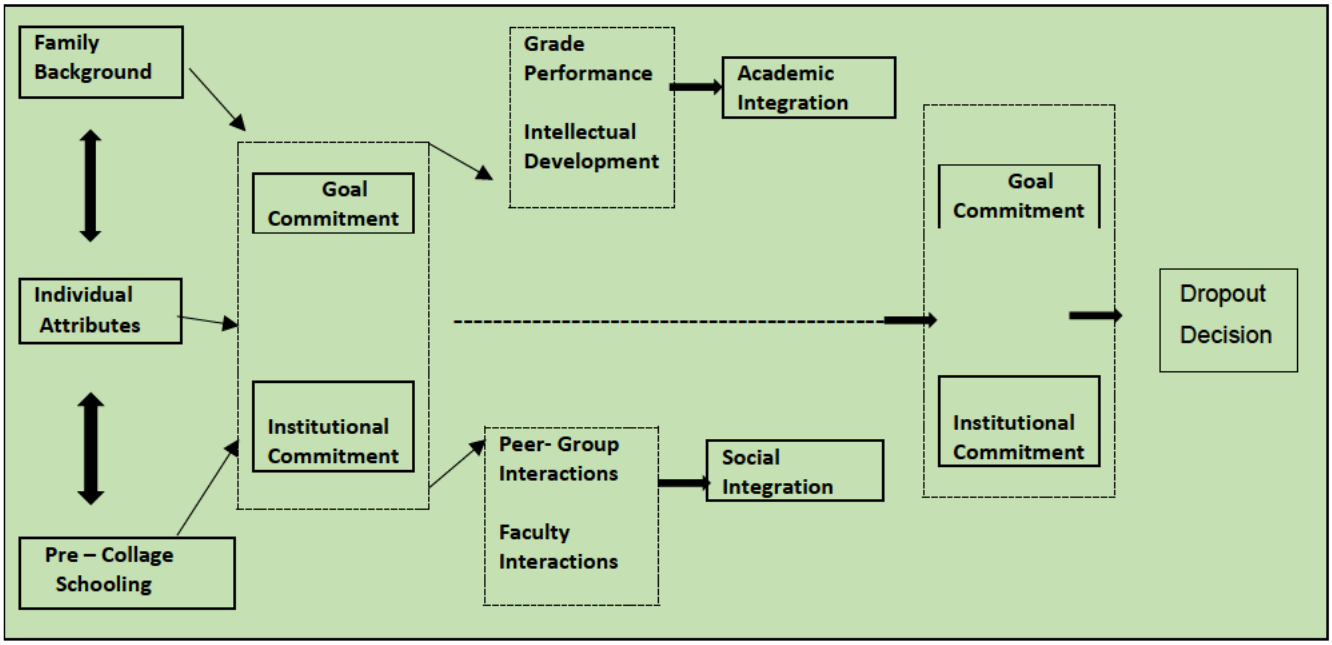


Figure 2.3: Tinto's 1975 model on student departure

(Tinto, 1975)

Figure 2.3 illustrates Tinto's longitudinal student integration model explaining the process of student departure from higher education. Tinto's retention model adopted a multifaceted approach. According to this model, in order for a student to achieve success at university, there has to be both academic and social integration. This model provided a conceptual framework to understand reasons for student dropout. One of the key criticisms levelled against this model is that since it focused mainly on traditional, white, young American first year students residing in private residential institutions and was too homogenous (Brunsden et al., 2000). A further critique by Tierney (1992) was that Tinto's use of academic and social integration was too broad and did not address specific issues like cultural integration (Tierney, 1992). However, Tinto's research has played a critical role in illuminating the institutions part in creating the necessary environment for student integration. All of the components in Tinto's model have been well researched and documented and will not be engaged with in this study. Rather, focus will be given to those risks that the researcher considers relevant to this study.

Academic preparation of students for university was initially seen to be the responsibility of secondary schools. However, in recent years, the role of universities in ensuring student success has come under the spotlight with some questioning whether universities themselves are sufficiently prepared for their students (et al., 2020). As a response, universities have introduced various academic interventions to increase throughput and graduation rates and reduce the risk of dropout. Some of these interventions include the provision of bridging courses, extended curriculum programmes, first year student experience programmes, additional tutorials and student mentors amongst others. A brief discussion of some of these interventions follow.

2.9 THE FIRST YEAR STUDENT EXPERIENCE PROGRAMMES

It is widely documented that the risk of dropout is the highest amongst first years (Behr et al., 2020; Aina et al., 2022). A plethora of research has been done on the possible causes for this and various interventions have been implemented (Casanova et al., 2021). However, the problem continues to persist. According to Tinto, students go through three stages when adjusting to university life. The first

phase is the separation phase, were students need to leave behind their school experiences and adjust to university life. It is imperative for universities to have effective transformative support programmes at this stage, to ensure smooth adjustment to university life. The transition phase requires students to gain new knowledge and skills in order to cope with the rigours of university. In this phase it is common for students to struggle due to the academic gap between school and university (Tinto, 1987; Stăiculescu & Ramona, 2018; Dison et al., 2019). It is the responsibility of universities to ensure that this knowledge gap is filled through the inclusion of various academic reading and writing skills in the first-year curriculum. The final phase, which is incorporation, the student has to adapt to a new environment and build social relations with fellow students, faculty and the institution. The inability of students to integrate into the new environment may result in the loss of hope, thereby resulting in departure (Tinto, 1988).

One of the contemporary interventions to assist students to integrate into the university environment and reduce the risk of first year dropout and enhance throughput, is the introduction of first year student experience programmes. The objective of these programmes is to assist first year students to adjust both academically and socially to university life, thereby increasing academic performance and throughput. Initiatives such as the South African National Resource Centre for First-Year Experience and Students in Transition have provided and continues to provide valuable research in FYSE (Brown et al., 2015). The FYSE programmes are designed to increase throughput from first year to second and is open to all first-year students. Many South African universities have FYSE initiatives. Though programme forms and functions implemented vary amongst individual institutions, the main goal is the same, to increase academic performance and ensure that students graduate (Hevel et al., 2018).

An examination of the FYSE initiatives by three leading South African universities indicate many similarities in the programmes offered. However, there are some initiatives that are unique. FYSE initiatives were guided by theoretical underpinnings, through the works of Tinto, Astin, Bourdieu and others (Russell, 2020). The FYSE programmes offered by the University of Witwatersrand (Wits)

include academic literacy skills, computer literacy, mental wellness coaching, leadership camps, mentorship programmes, FYSE ambassadors, career counselling and academic support groups amongst others. In order to support first year residence students academically, Wits has a residence programme that offers weekly, compulsory, tutorials that need to be attended by all students (University of the Witwatersrand Johannesburg, 2024). The University of Johannesburg (UJ) FYSE begins when their student recruitment drive starts, which is usually in Grade 12. Potential students are exposed to an online orientation programme that provides information about the university, the needs of students and the City of Johannesburg as a whole. An extended orientation approach has also been adopted where academic staff assist students with challenges through the use of online teaching and learning resources. In addition, a new online module named, UJ Success 101, was created for first years. The module includes information and resources which students could use (University of Johannesburg, 2024).

Research has indicated that students who participate in FYSE programmes are more likely to return for their second year. Studies conducted by Terenzini and Pascarella (1978) found that students who participate in FYSE programmes are more likely to graduate in regulation time (Terenzini & Pascarella, 1978). In terms of the success of FYSE programmes in South Africa, the University of Johannesburg (UJ) reported that their undergraduate success rate increased by ten percent (10%) due to the FYSE programmes while the University of Cape Towns (UCT) completion rate increased by over eight percent (8%) (Hevel et al., 2018; University of Cape Town, 2021; University of Johannesburg, 2024). To ensure the success of FYSE programmes, support from top management is paramount. In addition, the FYSE programmes need to be centrally controlled and shared responsibility by both staff and students is necessary (University of Johannesburg, 2024).

2.10 THE NATIONAL BENCHMARK TEST

Despite students meeting the requirements for university entrance, universities still struggle with low throughput and graduation rates. It is estimated that more than fifty percent (50%) of registered students drop out and only twenty-five (25%) of students complete their undergraduate studies in regulation time (Mutakwa & Mhakure,

2019). This begs the question: Is the National Senior Certificate Exams (NSC) a good indicator of a student's ability to academically cope at university? Judging from university throughput and graduation rates, it seems unlikely. As an intervention to reduce the risk of low throughput and graduation rates, the National Benchmark Tests were introduced by Higher Education South Africa in 2005 (now known as University South Africa) (Mabizela & Green-Thompson, 2019; Mutakwa & Mhakure, 2019).

How are the National Senior Certificate (NSC) and NBT different? The NSC provides an estimate of the position of the learner in relation to their peers while the NBT provides information about the behaviour that can be expected of a person with a given score. Academic performance in prior years of study is a good indicator of academic performance at university (Archambault & Archambault, 2016; Jansen & de Villiers, 2016; Maksy & Wagaman, 2016). Admissions that rely solely on the NSC performance may result in the selection of students who are not sufficiently prepared. The NBT may help with the selection and suitable placement of students as well as identify those that need support (Carpenter & Roos, 2021). Therefore, the NSC and NBT should be seen as complementary (Prince, 2017; Mabizela & Green-Thompson, 2019; Carpenter & Roos, 2021).

The NBT assesses students' cognitive knowledge in academic literacy, quantitative literacy and mathematics (Bohlmann et al., 2017). The NBT is used together with the NSC in the selection of students. In addition, it can be used to identify whether students should be placed in the bridging course, ECP or mainstream programmes and assist academics with identifying the kinds of teaching and learning support that is required (Cliff, 2015; Bohlmann et al., 2017).

The NBT consists of multiple-choice tests in Academic Literacy, Quantitative Literacy and Mathematics. It is compulsory for all NBT candidates to write the Academic Literacy and Quantitative Literacy exams. The Mathematics exams, however, only needs to be written by candidates who intend studying in a field requiring mathematics. The student's results are classified in three levels, namely, basic, intermediate and proficient. The results are used to identify the programmes

in which students should be placed as well as the support needed (Carpenter & Roos, 2021). Table 2.1 provides a summary of the implications of the test results.

Table 2.1: Implication of test results

PERFORMANCE BAND	DESCRIPTION
BASIC	These results indicate that the learner has serious learning challenges and will not be able to cope without extensive long-term support e.g. bridging programs.
INTERMEDIATE Since most of the results lie in this domain, there is a further distinction between "intermediate upper (IU)" and "intermediate lower limits (IL)".	IU These results indicate that students will require additional support in the form of additional tutorials, workshops, and courses. IL These results indicate that the student should be placed in an extended curriculum program.
PROFICIENT	According to these results students should be able to cope with the demands of higher education and can therefore be placed in mainstream programs.

Many South African universities use the NBT as a tool to select and place students in suitable programmes and to determine the additional support that is required to be successful (Carpenter & Roos, 2021). However, the NBT is not compulsory and its use in selection and placement of students is discretionary (Nel, 2020).

There are mixed views on the use of NBT for student selection and placement. Van der Westhuizen concluded that academic literacy, quantitative literacy and mathematics play a major role in a student's performance and the NBT should therefore be used as a tool in student selection (Van der Westhuizen & Barlow-Jones, 2015). In addition, Spaull and Taylor (2015) argue that since the NSC results show wide differences in learning by Grade 12 students (across schools and provinces), the NBT can be used to measure the levels of learning relevant to higher education (Spaull & Taylor, 2015). However, Van der Merwe et al., (2016) asserts that while the NBT domains may have an impact on first year performance, only academic literacy maintains its influence through to the last year of study (Van der Merwe et al., 2016; Mabizela & Green-Thompson, 2019). Carpenter and Roos (2021) add that there is contrasting evidence on the ability of the NBT and NSC to predict student performance as they focus on current competencies, rather than future potential (Carpenter & Roos, 2021). Cele asserts that the use of pre-admission tests results in a form of social exclusion and that the use of 'big data' is a more suitable alternative for student selection (Cele, 2021).

There seems to be a lack of research on the use of the NBT's in the Accounting discipline. Findings from one study in Accounting indicated that there were strong correlations between the NSC and NBT and that both the results should be considered in student selection (Carpenter & Roos, 2021). Despite the criticisms, the NBT provides an indication of the readiness of students for university for and can assist in the suitable placement of students once they are admitted. The tests can even be rendered after student selection to determine which programmes students should be placed in and the necessary support that needs to be provided. NBT's is another tool that can be used to minimise the risk of student dropout and ensure throughput in regulation time.

2.11 SATAP TESTS

The Standardised Assessment Test for Access and Placement (SATAP) is another test that can be used to identify students that are at risk of failing. The tests will provide guidance on whether students should be placed in mainstream or extended curriculum programmes, curriculum design and teaching and assessment methods

(Jacobs, 2010; Jacobs et al., 2015). Tests can be conducted in academic literacy, mathematics, maths literacy and science. There are many common objectives between the SATAP and NBT. Both tests are aimed at testing the relationship between school results and the competencies required for first year students which in turn assists in identifying suitable interventions. SATAP is another diagnostic aid that can help identify students at risk thereby reducing the risk of low throughput.

2.12 EXTENDED CURRICULUM PROGRAMMES

The Extended Curriculum Programme (ECP) was introduced by government to enable disadvantaged students who have not done well in Grade 12, but who have potential, to enter into university (Luckett & Shay, 2020). The importance of extended programmes was first highlighted in the 1997 Education White Paper 3: A Programme for the Transformation of Higher Education. As the name suggests, the curriculum for these students are extended by a year to incorporate developmental modules such as academic literacy, information technology and critical thinking (Department of Education, 1997; Ogude et al., 2019; Sibiya & Mahlanze, 2019). SATAP tests are usually used to determine those students who qualify for the mainstream programme and the extended curriculum programme. Another objective of the programme is to ensure that students graduate in minimum time.

The programme allows for academic content to be delivered at a slower pace. Teaching and learning takes place in smaller classes and includes extra support. However, since the admission system of some universities are often extended beyond the closing date (in many cases after the first tests have been written), ECP students that register late miss out on crucial work. This increases their risk of failing (Leshoro & Jacobs, 2019; Ogude et al., 2019). A study by the North West University on the impact of ECP programmes on accounting students found that the progression rate of ECP students were higher in comparison to mainstream students (Bozalek, 2021). Respondents believed that the ECP programme contributed to the better performance of accounting students.

One of the criticisms by ECP students are being stigmatised by both lecturers and fellow students due to lower entrance requirements. A survey conducted by Sibiya

and Mahlanze, confirmed this sentiment. However, the survey also discovered that many students felt that the additional modules (academic literacy, information technology and English communication) really assisted them in achieving success. In addition, students stated that they felt more confident and in many instances outperformed the mainstream students (Ogude et al., 2019; Sibiya & Mahlanze, 2019). One of the recommendations to ensure that the programme remains effective is that continuous reflection should take place on the design of the programme. In addition, universities should develop a placement policy that includes the criteria for student selection (Sibiya & Mahlanze, 2019; Slabbert & du Plessis, 2021).

2.13 LECTURER EVALUATION QUESTIONNAIRES (LEQ)

One of the primary responsibilities of lecturers is to ensure that their students evolve into quality graduates (Noori et al., 2020). This is achieved by providing students with quality teaching and learning. Student feedback is essential in achieving this. Lecturer evaluations are a common method used to evaluate lecturer performance (Sok-Foon, 2012). Lecturer evaluations allow students to voice their opinions on what aspects they like and what they feel needs improvement in their lecturer's performance. Effective feedback allows lecturers to self-reflect and look at ways to improve their teaching (Sherwani et al., 2015). To prevent manipulation evaluations should be conducted using centralised administration systems. It is also imperative that the identity of all students remain anonymous. Flaws in this regard may pose a risk relating to the validity of the process (Sherwani et al., 2015).

2.14 TUTORIALS

One of the consequences of massification is large classes. Large class sizes do not provide the opportunity for deep learning and understanding. In order for quality learning to be achieved, lectures have to be supplemented by other forms of teachings. One way of achieving this is through the use of tutorials (Ryan et al., 2020). The tutorial system dates back to many years and was first developed by the University of Oxford. The traditional Oxford tutorial can be described as a system were lecturers discuss subject matters with a very small number of students. Over time it has evolved and resulted in many different interpretations and applications (Layton, 2015). Tutorials provide the opportunity for personal attention, deeper

engagement and the development of skills such as problem solving and critical thinking (Trigwell et al.,1999; Balwant & Doon, 2021). Therefore, tutorials can be defined as personalised and student-centred small group sessions that provide a safe space for deeper engagement with the subject area in order to develop important skills and abilities that are targeted by the course (Balwant & Doon, 2021). Research on the effectiveness of tutorials in the achievement of student success is limited. Research by MacGillivray (2009) and Manalo (2010) discovered that students who attended tutorials achieved a ninety-seven percent (97%) pass rate opposed to a pass rate of forty-eight percent (48%) for those that did not (MacGillivray, 2009; Manalo et al., 2010). However, the study only used a sample size of thirty-seven students. A further study by Choundhary and Malthus looked at the impact of maths tutorials over a ten-week period. Prior to the attendance of tutorials, pass rates ranged between 13.3% and 100%. After the tutorial intervention the pass rates increased between 60% and 100% (Choudhary & Malthus, 2017). A limitation of the study was that it only looked at twenty-seven students. A more recent study by the University of Northampton used three and half years of student assessment data from its tutorial database. This included over 16000 students and 175000 assessments. It discovered that the pass rates for students who attended tutorials were much higher and there was a positive correlation between the number of tutorials attended and the marks achieved. The findings from this study is significant due to the large sample size (Coulson & Loddick, 2020).

Due to the large number of students who are in need of academic support, university resources are being stretched in terms of venues, finance and the availability of suitable tutors. However, the use of online learning platforms such as Moodle and Blackboard could help alleviate some of these challenges (Layton, 2015). One of the key focus areas in the DUT's strategy map, known as Envision 2030, is to provide a distinctive education by promoting the development of "adaptive graduates". Tutorials are an effective tool that can assist in the realisation of this objective. The DUT Guideline Document for Tutorials is comprehensive and sets out the principles, strategies and procedures for tutorial implementation. In addition, it provides guidance on the responsibilities of HOD's, lecturers, CELT, tutors and students. The document recognises that for tutorials to be effective they should be

comprised of small classes. The DUT provides programme specific academic course tutorials as well as additional support tutorials such as FYSE and Residence Tutorial Programmes. The DUT Guideline Document for Tutorials states that academic tutorials should be mandatory and contribute to a student's year mark. FYSE programmes have been discussed earlier. The Residence Educational Programme provides tutorials to undergraduate students that are living in the university residences. Tutorials assist students to improve subject knowledge and understanding, literacy levels and reading and comprehension skills (Durban University of Technology & Centre for Excellence and Training, 2021).

Some of the pre-requisites to become a tutor include undergoing tutor training and the achievement of a minimum of sixty-five percent in the module being tutored. HOD's need to ensure that tutor appointments are timely and that tutor performance is reviewed. Lecturer's responsibilities entail the monitoring of tutorials and the administration of tutor evaluation questionnaires. The CELT need to train tutors, develop support materials, maintain tutorial records for institutional planning and conduct research on the impact of tutorials on student success.

There are however some areas that still need clarification. The document states that tutorial attendance should be compulsory and contribute to the year mark. This leaves room for personal judgement by HOD's or lecturers as to whether they want to implement this strategy. The document also speaks about tutorials comprising of small classes. However, there is no quantification of this. It is important to provide quantification as this will affect budgeting.

Tutorials are an effective risk management tool to assist in the throughput and graduation of students. However, for the programme to be effective there has to be continuous review and necessary interventions to achieve its objectives.

2.15 RESIDENCE BASED EDUCATION PROGRAMMES

Residence based tutorial programmes have become a popular feature at many universities. However, research in this area is limited. The programmes are provided to students who reside at the university residences and is mainly targeted at first

year students. A recent study on the effectiveness of the Resident Based Tutorial Programmes at the University of Witwatersrand highlighted some of its benefits and limitations. The study found that the programme was beneficial, especially for first year students from previously disadvantaged backgrounds. Most students reported that they felt safe in this environment and felt that they could ask questions more freely without the fear of being judged or laughed at. In addition, students felt that the tutor had created a safe environment which allowed them to interact freely with other students. A few students felt that some of the tutors lacked the academic knowledge needed to conduct the tutorials. These students admitted that they only attended classes because it was compulsory. One of the key recommendations from the study included the need to establish a link between the residence-based tutorial programme and the mainstream programmes. This would enable tutors to work in conjunction with the faculties and departments (Malatji et al., 2019). The use of Residence Based Educational Programmes is viewed as an effective intervention in reducing the risk of low student throughput and graduation.

2.16 COMPETENCIES AND RESPONSIBILITIES OF LECTURERS

The core function of a lecturer is teaching and learning. In order to provide quality teaching it is important for an individual to possess the necessary competencies. Simply put, competency includes the knowledge and skills required to perform a task effectively (Prasetio et al., 2017). Not all individuals who are experts or great academics make good lecturers. Besides knowledge, a lecturer needs to have good presentation, communication and problem-solving skills. In addition, the ability to transfer knowledge to students in a simplified way is a fundamental skill that lecturers have to possess (Prasetio et al., 2017; Latip et al., 2020).

There have been a number of studies conducted on lecturer competencies. A study at the DUT found that most respondents were happy with how well their lecturers were prepared, however, some felt that the methods of teaching and teaching aids could be improved (Dorasamy & Balkaran, 2013). Research conducted at a South African university on lecturer competence found that forty-four percent (44%) of lecturers were unable to provide clear answers relating to questions posed by students on a topic (Segabutla & Evans, 2019). To add, a study carried out on a

group of accounting students to determine the reasons why students were struggling, revealed that some lecturers lacked knowledge on the subject and had poor presentation skills. Khalid et al. (2020) determined that there is a significant linear relationship between lecturer competencies and academic performance (Khalid et al., 2020). Another critical competency for a lecturer is the ability to link material taught to industry practices especially with the ushering in of the 4th industrial revolution. However, many universities hire staff without any industry experience resulting in the creation of graduates who are unable to function in the work environment (Dorasamy & Balkaran, 2013; Latip et al., 2020). To add, the use of contract lecturers are quite prevalent in universities. Many of these lecturers include students who have just completed their studies with no work experience. At times these staff are hired out of desperation (due to lack of capacity) and many of the quality control checks that are normally in place when hiring permanent staff are bypassed.

Findings from a study conducted by Eloff (2023) concluded that lecturer's responsibilities are not limited to the classroom, but extend to the provision of academic, emotional and moral support. Academic support includes helping students after hours with their work, as well as encouraging and motivating students to study. Emotional and moral support entailed lecturers being friendly, kind and compassionate. Some students commented that when lecturers were friendly it was easier to ask for help. Some students added that lecturers should have an open-door policy where students are able to discuss school or personal matters in confidence (Eloff et al., 2023). Research by Bailey and Phillips (2016) determined that good relationships with lecturers could motivate students to perform better (Bailey & Phillips, 2016). Similar views are supported by other researchers (Dobrovská & Andres, 2016; Daniels & Jooste, 2018).

The job description of lecturers have changed significantly over the past few years. In addition to teaching; research, third stream income and community engagement have become core functions of academics. This has resulted in increased workloads, time pressure, inadequate support structures, poor working conditions and lack of professional recognition. However, there is an increasing demand for

lecturers to be held accountable for student throughput and graduation rates (Poalses & Bezuidenhout, 2018; Bothma & Rossouw, 2019; Eloff et al., 2023). A study conducted by a large South African university indicated that lecturers were struggling to balance teaching and learning with research and community engagement. One lecturer commented “I have to publish, I have to do community work. But where do I find the time to do that?” (Albertyn et al., 2016, p.25). Burnout and stress have become common and, in many cases, have resulted in decreased passion. As another lecturer said “ I almost couldn’t cope……going the extra mile, over and above what the university expected me to do” (Exeter et al., 2010; Albertyn et al., 2016, p.26).

Another feature of the South African Higher Education system is large classes especially in the first year. This poses a huge challenge in providing quality education. Lecturers have to now cater for a diverse group of students. Students may be at different levels of understanding which makes it difficult for the lecturer to cater for the learning needs of all students. Some lecturers stated “We are getting the job done, but it’s not with the quality we would like to see. The first year is where a serious foundation is needed…whatever they miss out on there, they will have a backlog as they proceed through their studies”. Some modules require practical application which is difficult to teach in huge classes. This poses a huge risk to student success (Albertyn et al., 2016, p.26; Eloff et al., 2021).

One of the methods used by universities to assess lecturer competencies is through the use of lecturer surveys. Since students are consumers of education, their views are important in assessing whether quality education is being provided. Feedback provided by students allows lecturers to reflect upon their current teaching practices and identify areas for development. Having acknowledged the importance of lecturer surveys, it is equally important to recognise that surveys also have their pitfalls. Surveys can be used as a form of revenge by students for getting back at their lecturers due to their poor marks. Very often surveys are completed by very few students to make a fair evaluation. There is also the tendency for students who have not attended lectures to complete surveys thereby resulting in a distorted evaluation. Lecturers on the other hand may resort to unethical tactics, like promising students

a breakdown of the test in exchange for a good evaluation. Teaching surveys do serve as an important tool in evaluating lecturer performance. However, strategies such as teaching portfolios and peer evaluations could also be used to assess quality teaching (Dorasamy & Balkaran, 2013; Davidovich & Eckhaus, 2019).

There have been a few initiatives by government to assist academics with teaching and developmental challenges. Staffing South Africa's University Framework (SSAUF) has recognised the need for improved staff-student ratios in order to achieve increased throughput and success rates. The implementation of the University Development Programme and University Development Grants will be used to address this. In addition, these grants will also be used to help academics acquire Masters and Doctoral degrees (Department of Higher Education and Training, 2020).

In order to ensure that lecturing staff are competent, the DUT offers various training and developmental programmes for staff. However, in 2021, the university retrenched all academic staff who did not have a Master's degree (BusinessTech, 2024). Many academics, with years of service and professional qualifications were retrenched. The Department of Accounting lost many chartered accountants in this process. Many of these positions were filled with people who did not have any industry experience. This poses a huge risk in terms of developing quality graduates who are able to perform in the work environment.

The implementation of a performance measurement system at the DUT has created a lot of stress for academics. In addition to teaching and learning, staff are required to contribute to research, community engagement and sustainability. Workloads have dramatically increased and staff are struggling to cope with the new requirements.

Large classes are also prevalent at the DUT and increases the risk of inefficient throughput and success rates. As part of its quality assurance policy, the Durban University of Technology requires lecturer and subject evaluations to be completed by students. The Centre for Quality Promotion and Assurance (CQPA) within the

DUT is responsible for the design, development and implementation of questionnaires which have to be completed annually by students for both annual and semester programmes. Feedback of the analysis by the CQPA is sent to the Faculty Quality Committee, heads of departments and lecturers. The Faculty Quality Committee plays an oversight role in ensuring that good practice is maintained and interventions are implemented in response to the outcomes of student evaluations (DUT). However, the low response rate by students has been a matter of concern (Faculty of Accounting and Informatics: DUT, 2021).

2.17 COVID-19

In December 2019, the world experienced an unprecedented health pandemic, Covid-19 (Shereen et al., 2020). The impact of Covid-19 was far reaching, affecting every sector of business. Higher Education was no exception (d'Orville, 2020). With heavy lockdowns being imposed all over the world, it soon became evident that it could not be 'business as usual' (Pokhrel & Chhetri, 2021). Universities had to quickly move from traditional face-to-face learning to online learning. The move was not very challenging for some institutions who had already been using a blended learning approach. However, others had to move to 'emergency mode' in order to save the year (Müller et al., 2021).

The transition from face-to-face learning to online learning, in a short period, was stressful for learners, teachers and the university (Lurvnik, 2020; Marinoni et al., 2020). The use of online tools such as Microsoft Teams, Google Classroom, Blackboard and Moodle has played a crucial role during the pandemic (Jandrić, 2020; Subedi et al., 2020). Universities hastily rolled out laptops and data to underprivileged students (Department of Higher Education and Training, 2020). However, poor internet connection especially in rural areas posed a huge problem (Omodan & Ige, 2021). To exacerbate the situation the implementation of load shedding hampered the provision of online lectures and support to students (Mlambo & Mpanza, 2021). In a study performed at a South African university, students voiced their views in this regard. Some students felt that online learning was disturbed by poor network connection and sometimes load shedding, both over which they had no control (Omodan & Ige, 2021).

Training and support in using digital platforms was very slow during the initial stages, with both learners and teachers learning through trial and error (Eberle & Hobrecht, 2021; Pokhrel & Chhetri, 2021). In a 2021 study at a South African university, students interviewed claimed that their institution needed to provide training to students (first year to final year) on the use of different tools on Blackboard to enhance their learning. Other respondents claimed that some lecturers needed training on how to conduct online lectures. However, this study was limited to one university and is not a reflection of the situation at all universities.

The mental state of students has been severely affected by the pandemic. During the start of the pandemic there was confusion as to the causes of Covid-19, even amongst healthcare professionals. The constant media attention and misinformation added to this (Caceres et al., 2022). Illness and death of peers and their loved ones had huge psychological impacts on students who were already stressed by the sudden transition to online new platforms for learning (Brooks et al., 2020; Rajkumar, 2020; Salari et al., 2020). To add, the quality of support services like student counselling was weakened due to it being online.

Besides teaching and learning, socialisation between students is important in the holistic development of an individual. Tinto asserts that to succeed at university, students need both academic and social integration (Tinto, 1975). Covid-19 has had a devastating effect on the socialisation of students with their peers, lecturers and faculty, especially, for first year students (Dabrowski & Mitchell, 2022). First years, have had to undergo a ‘double transition’, the normal challenges of adjusting to university life and in addition Covid-19 (Annsilla, 2021). One of the risks of double transition is that students may become demotivated due to poor learning spaces as well as develop poor study methods which persist to their final year of study. Seeing that most student dropout occurs in the first year, it is imperative that suitable interventions are implemented to manage this risk.

Studies on academic performance during Covid-19 are limited. A study conducted by Omari found that there were no major differences in the exam results of students prior to (handwritten paper exams) and during Covid-19 (online exams). Other

studies have also supported this finding (Gonzalez et al., 2020; Mahdy, 2020; Omodan & Ige, 2021). The findings also revealed that students preferred online assessments to handwritten paper exams. Recent protests by DUT students, who refused to write physical hand written exams in preference of online exams seems to support this view (The Witness, 2022). Findings from research conducted on higher education students in Saudi Arabia revealed that students preferred numeric assessments to be online and essay type questions to be paper based. Other studies have revealed that the pandemic has resulted in poor content delivery and low quality assessments (Omodan & Ige, 2021). In addition, poor controls for copying and plagiarism may compromise the quality of teaching and learning.

Despite the hurdles, Covid-19, has made the need for online learning unavoidable. In order to remain relevant, it is imperative that universities adopt a blended learning approach i.e. a combination of both digital and conventional learning (Dhawan, 2020). Blended learning can lead to increased academic performance (Nuris et al., 2018; Duraku & Hoxha, 2020). However, it is important to identify all potential risks related to this objective and ensure that adequate interventions are implemented.

The management of the coronavirus at the DUT was handled by a specially appointed DUT Covid-19 Response Task Team. The task team's responsibility was to send regular communication to all staff and students relating to Covid-19 statistics for the university, rules and regulations for entry into campus, important contact details for counselling services, 24-hour hotline, and general advice on how to prevent contracting the virus.

Training programmes for online platforms such as MS Teams and Moodle were created and constantly updated. Contact details for help with any online matter was circulated through e-mails. The University provided free monthly data to students and staff. All face-to-face lectures were suspended in March 2020 and have not fully commenced to date. However, students are allowed to enter campus to perform their practicals. The majority of staff continue to work at home.

The use of online learning has been in use since 2020. Initially, the Faculty of Accounting and Informatics found it extremely stressful to adapt to this new way of teaching and learning, as it previously only had face-to-face learning. However, over time students and teachers seem to have adjusted. All assessments in Accounting are done online. The inappropriate design of multiple-choice assessments by some, the lack of proctoring equipment and inadequate support are risks which may affect the quality of teaching and learning (Coghlan et al., 2021; Dadashzadeh, 2021). Potential risks in this regard need to identified and timeously addressed.

2.18 THE SIYAPHUMELELA PROJECT

The Siyaphumelela (We Succeed) project was launched in 2014 by the South African Institute for Distance Education (SAIDE). The main aim of the project is to use data analytics to assist in improving undergraduate throughput rates. This is to be achieved by increasing university resources to gather and analyse student data about why students are not succeeding and to implement suitable interventions to manage this risk (*Siyaphumelela: A student success initiative*; The KRESGE Foundation, 2022). There are six participating universities, namely, Nelson Mandela Metropolitan University, University of the Free State, University of Pretoria, University of Witwatersrand and the Durban University of Technology. Each of these universities has its own project goals, but they should all align with the national objective. Phase 1 of the Project was from 2016 to 2019. Phase 2 was from 2020 to 2023. The second phase aims to continue with the work started in Phase 1 and expand its learnings across the higher education sector.

Data analytics entails the use of large quantities of student data (big data) that can be used to identify patterns and trends to predict student success, recognise obstacles that prevent effective teaching and learning as well as designing suitable interventions (Judd et al., 2017; Cele, 2021). In addition, big data can be used by universities to increase transparency of student's needs and creating predictive models for performance. Rubel and Jones (2017) concur with this view but add that moral and policy issues relating to students privacy need to be addressed (Rubel & Jones, 2017). Some of the concerns include using data to categorise students and

stereotype them, classifying students on the basis of race, gender, ethnicity and financial status, all of which are remnants of the past (Avella et al., 2016).

The DUT is one of the universities involved in the Siyaphumelela Initiative. The DUT has three focus areas, holistic student support, creating an integrated teaching approach and implementing culture change. Table 2.2 lists the main student challenges and the initiatives to address this.

Table 2.2: Challenges faced by the DUT

Biggest Student Success Challenges at DUT		Siyaphumelela Focus Areas	
1	Financial and Food Insecurity of our students	1	Sikusekele (Holistic Student Supports redesign)
2	Disjointed University support systems and processes		
3	Different levels of preparedness of students to become adaptive graduates and staff to engage with pedagogies that develop graduates with the acumen to initiate and/or respond to change	2	Moving the Middle: An integrated pedagogical approach to supporting Staff and Students
4	Institutional Culture Change – Creating a data and evidence-led decision-making culture	3	Institutional Culture Change

ENVISION2030 fairness · professionalism · commitment · compassion · excellence transparency · honesty · integrity · respect · accountability

DUT DURBAN UNIVERSITY OF TECHNOLOGY

Table 2.2 illustrates the challenges faced by the DUT and how these will be addressed through the Siyaphumelela Project.

One of the teaching and learning focus areas of the Siyaphumelela Project, during the first half of the 2019 academic year, was on understanding the experiences and challenges faced by the DUT's first-time entering students. The University's continued participation in the national Beginning University Survey of Student Engagement (BUSSE) provided useful data on first-year students' prior high-school experiences and behaviours, and their expectations about university studies. Data

from this survey was complemented by a new survey, the First-Year Student Survey (FYSS) that was designed by the DUT Siyaphumelela team to focus on students' experiences during the intake and registration process, in their first months at the University.

Other teaching and learning highlights included the official launch of AutoScholar, DUT's student tracking system, at DUT Data Day and the University's data warehouse, using the PowerHEDA platform. DUT Data Day is a revisioning of the biennial Institutional Research Day into an exhibition that showcases different data and the use of data to inform decision making across the university. In terms of teaching and learning, and the improvement of throughput, AutoScholar holds great promise for identifying at-risk students and intervening timeously through academic advising and other student support mechanisms. One of the DUT Siyaphumelela Project's Wildly Important Goals (WIG) established at the outset of the project was to improve the throughput rate (minimum time to graduation) of our three year programmes from the then 33% to 40% by 2020 (DUT, 2019).

CHAPTER THREE - THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The previous chapter provided a discussion of the relevant literature relating to the study with a view to providing a framework of the most recent knowledge that guides the study. This chapter will provide a discussion of the theoretical framework used to support this study and shows how this framework has informed the data management process with a view to explaining the findings of the study. In this regard, the King Code on Corporate Governance is presented and discussed.

3.2 THEORETICAL FRAMEWORK DEFINITION

The term theoretical framework is made up of two components i.e. theory and framework. A theory is a set of arguments in support of certain interrelated ideas (Kivunja, 2018). The theory describes the interrelations amongst these ideas thereby presenting a systematic view of the phenomena. It stipulates which variables are related and how they are related thereby allowing the researcher to make predictions (Kerlinger & Lee, 2000; Kivunja, 2018). A framework is a structure supporting or containing something. A theoretical framework therefore provides a structure for a set of ideas and systematically depicts the interrelations amongst these ideas allowing the researcher to make predictions (Kivunja, 2018). The selection of a theoretical framework requires careful thought. It serves as a structure and support in ensuring that the rationale, problem statement, purpose, significance, research questions, literature review and most importantly the methods and analysis are tightly aligned and intricately interwoven (Kivunja, 2018; Osanloo & Grant, 2016). Put differently, the theoretical framework is the ‘lens’ through which you interpret your data and determine interconnections which can assist in making meaning of your research problem and questions (Kivunja, 2018; Osanloo & Grant, 2016).

3.3 THE KING CODE ON CORPORATE GOVERNANCE AS A THEORETICAL FRAMEWORK

Having read many seminal works in the field of corporate governance, I found the King Code on Corporate Governance to be the dominant theoretical framework for

my study. The main reasons for this is that King (Insitute of Directors, 1994, 2004, 2009, 2016) relates to the South African context, deals extensively with risk management and very importantly, it applies to all entities regardless of their manner and form of incorporation. Compliance with the principals contained in the report will result in any company practising good governance. The King Committee on Corporate Governance arose as a consequence of many corporate failures arising from a lack of proper governance by the management of corporates. The Committee was formed in 1992 to examine and address corporate governance in South Africa. In drafting the King Code on Corporate Governance, the committee examined various international codes, legislation and best practices. Some of these included the Sarbanes Oxley Act, the Cadbury Report and the Committee of Sponsoring Organisations (COSO) framework on risk management (Committee of Sponsoring Organisations, 2004; Financial Crime Acdemy, 2024; Percy, 1995).

The work of the King Committee gained international recognition and respect for its role in promoting good governance (Langeni, 2018). The Committee was headed by retired Judge Mervyn King who is professor extraordinaire on corporate citizenship at the University of South Africa, honorary professor at the University of Pretoria and Cape Town and visiting Professor at Rhodes. He also holds various honorary doctorates from international universities. In addition, he is also chair emeritus of the International Integrated Reporting Council (IIRC) in London and a member of the Private Sector Advisory Group to the World Bank on Corporate Governance, making him a leading expert in the field of corporate governance (International Federation of Accountants, 2024).

The objective of the King Code is to promote good governance in South Africa by shaping the agenda for corporate governance, issuing reports and codes of best practices and remaining aware of the corporate governance environment in the country (Kana, 2020). King provides a holistic approach to corporate governance. It uses a top-down approach, starting with the governance and reporting responsibilities within the upper echelons of any organisation.

3.4 THE ADOPTION OF THE KING CODE BY HIGHER EDUCATION INSTITUTIONS

Public higher education institutions in South Africa enjoy considerable statutory independence (Government Gazette, 1997). This independence makes it important that the structures of governance and management of these institutions should account to both internal and external stakeholders in a consistent and prescribed manner (Institute of Directors, 2009). The Department of Higher Education adopted the principles of the King Code through the publication of the Regulations for Annual Reporting by Public Higher Education Institutions (Institute of Directors, 2002, 2009).

3.5 KEY PRINCIPLES OF THE KING CODE

The role of the governing body (council) is to lead the entity in a strategic direction and to provide oversight and accountability to ensure that the good governance outcomes of ethical culture, good performance and effective control are achieved. To achieve this, the King Code provides principles to assist the governing body. Some of these principles are:

- Ethical and effective leadership by the council. The Council should embrace the principles of integrity, competence, responsibility, accountability, fairness and transparency.
- The establishment of an ethical culture. This can be achieved through the approval of codes of conduct and ethical policies including key ethical risks.
- The Council should understand the institution's core purpose, risks, opportunities, performance and strategy. They need to understand that these are all inseparable elements of the value creation process.
- The Council should be the custodian of corporate governance in the institution.

This can be achieved by exercising leadership, having a charter and establishing committees to get professional advice and guidance. One of the key committees that need to be established is the Audit Committee. The function of such a committee amongst others is to oversee risks and meet with the external and

internal auditors, without management. In addition, there should be consideration given to the establishment of a separate risk committee in charge of risk governance.

- The Council should govern risk in a way that supports the institution in achieving its strategic objectives. In this regard, Council should treat risk as an intrinsic part of decision making, approve risk policy and evaluate and agree to the risks it is willing to take. In addition, it must delegate to management, risk management implementation.
- Council must ensure that there is both an internal and external audit function. With regards to the internal audit function, council must ensure that:
    - An internal audit charter has been prepared and the department is adequately resourced in terms of skills.
    - The Chief Audit Executive (CAE) is independent of management.
    - The Chief Audit Executive is able to access the audit committee.
    - Internal audit follows a risk-based approach, reviews the risk profile frequently and adjusts the plan as needed.
    - Internal audit makes an annual declaration on the effectiveness of the governance of risk management.
- The Council should adopt a stakeholder-inclusive approach that protects the interests of all stakeholders. In this regard, Council should delegate management to manage good stakeholder relationships.

3.6 KEY ELEMENTS OF THE KING CODE

The King Code contains key elements that should be followed by the governing body (Council). Some of these include:

- **The element of risk**

The King Code on Corporate Governance defines risk as the uncertainty of events; including the probability of such events occurring and their impact on the achievement of the organisation's objectives (Institute of Directors, 2002, 2009, 2016). Chapter One provides a detailed discussion of risk and will not be engaged with in this chapter. Risks faced by institutions need to be identified and suitable risk

management tools need to be used to manage these risks. During semi-structured interviews, participants were asked about their opinions on risks faced by the DUT and whether the interventions implemented to mitigate these risks were sufficient. Surveys issued to students, enquired of students whether they were aware of the academic support available to students as well as their opinion on the adequacy of support for students at risk of failing. This information was collected and presented as themes in the data analysis section of the study.

- **Governance and its relationship to risk**

The Council on Higher Education describes governance as “the policies, structures, processes and values by which institutions make decisions in pursuing their objectives” (Council on Higher Education, 2001, p.23). The Institute on Governance asserts that *“*governance determines who has power and who makes decisions” (Institute On Governance, 2023, p.4). Renn et al. (2011, p.14) supplements this assertion by stating that *“*governance describes the multitude of actors and processes that lead to collectively binding decisions*”* while Yirdaw (2016) highlights the fact that decisions made will impact both internal and external stakeholders (Renn et al., 2011, p.14; Yirdaw, 2016). Simply put, good governance is about effective leadership. Effective leadership is characterised by ethical values. These values should embrace the principles of fairness, accountability, responsibility and transparency. Council is ultimately responsible for the governance of risk and must understand that strategy, risk, performance and sustainability are inseparable (Department of Higher Education and Training, 2014). Ineffective governance leads to an increase in risk (Van Greuning & Bratanovic, 2020). This results in a lack of performance. Therefore, risk management is imperative in managing risks. This includes the risk of low throughput. The Annual Report must contain a statement by the university council on governance. During the data collection process all policies and processes relating to student throughput and risk management at the DUT was collected and studied. This data was used in deriving some of the questions for the semi-structured interviews and the student surveys. Data was analysed and presented using themes.

In accordance with the Regulations for Annual Reporting by Public Higher Education Institutions, the DUT Council is required to present a Statement on Governance in its Annual Report (Department of Higher Education and Training, 2014). The constitution, capacity and duties of the council are in accordance with the Higher Education Act No. 101 of 1997 (as amended in 2016), and DUT's Statute. Moreover, relevant legislation and appropriate internal control policies governing the use of university funds are implemented and compliance is regularly monitored. A Code of Conduct for council members ensures that the conduct of members is monitored, especially in terms of conflict of interests. In order to assist council with its overall oversight over the governance of the university, council committees are created and delegated some powers by the DUT council. The majority of the committee's members are comprised of external council members. The Executive Committee of Council (EXCO) makes decisions that are urgent on behalf of the council, monitors the operations of council committees and acts as the Remuneration Committee. The Audit Committee provides guidance to council on affairs relating to financial management, internal controls, accounting policies, reporting and disclosure. Due to the importance attached to risk management, as emphasised by the King Code on Corporate Governance, the DUT has a standalone Risk Committee. The overall function of the risk committee is to ensure that all risks are identified and managed. Other important committees include the Finance Committee, Human Resources Committee and the Code of Conduct Committee (DUT, 2020, 2021).

- **Accountability and its relationship to risk**

Accountability is accepting responsibility for one's actions (Mulgan, 2000). Accountability is a critical part of risk management (Rasid et al., 2019). Management is responsible for identifying potential risks and implementing effective interventions. In a higher education institution, accountability extends to the vice chancellor, council and other decision-making bodies. The university council, vice chancellor and other decision-making bodies are in a fiduciary relationship with the university. Fiduciary relationship relates to situations were individuals are placed in a position of trust and need to act in the best interests of the organisation and not their own (Mundo, 2024). For example, trustees in a trust act in a fiduciary relationship. They need to ensure that all decisions made are in the best interests of the beneficiaries

of the trust. Similarly, the university council and vice chancellor are placed in a position of trust and must ensure that all decisions made and executed are in the best interests of the university and its stakeholders.

Every university must have a strategic plan that contains its goals and objectives for the next five years. The strategic plan must indicate the main service delivery areas of the institution including a financial plan. Management must regularly account to the DHET about their performance by compiling a mid-term report, annual performance plan and an annual report. The mid-term report must highlight the main service delivery areas as well as the financial plan to support this. A comparison between the actual enrolment and the ministerial approved targets must be contained in the report. The mid-term performance report relates to the current year and must be submitted to the DHET by the end of November of the current financial year. The annual performance plan relates to the next financial year. The plan should include the enrolment targets that the Council has agreed to with the minister for the forthcoming year. In terms of the current year, the annual performance plan must include the headcount enrolment; first time entering enrolment; success rates inclusive of graduate output and throughput rates. Furthermore, the plan must include an institutional risk register detailing the critical risks identified, their likelihood of occurrence, potential impact and controls implemented to mitigate these risks.

- **Stakeholders theory and its relationship with risk**

Stakeholder theory defines a stakeholder as anybody who is or can be affected by the achievement of a company's objectives (Freeman, 1984). Some of the key stakeholders in an organisation includes customers, management, suppliers, government, shareholders as well as local communities (Ambler & Wilson, 1995; Haataja, 2020; Hwabamungu, 2014; Parmar et al., 2010). Students are the main stakeholders of a university. The success of a higher education institution is dependent upon its students (Lau, 2014). University management should build strong relationships with students, ensure frequent communication and provide the necessary support identified in order for them to complete their studies in minimum time (Felten & Lambert, 2020). Failure to provide adequate support to students

increases the risk of failing. Stakeholder engagements provide a platform for the council to acknowledge the concerns and views of students in its decision-making process. This adds to value creation (Ferrero-Ferrero et al., 2018; Cho, 2017; Crane, 2020).

- **The principle of sustainability and its relationship to risk**

The Bruntland Commission defines sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (Borowy, 2013). It is imperative that organisations are able to survive in the foreseeable future. Higher education institutions need to embed sustainability reporting as part of their DNA. If throughput rates of students are low it results in lesser government subsidies to the university. Therefore, it is important to have adequate interventions to manage the risk of low throughput. Sustainability reporting should not only be about collecting information and reporting it at year end but should rather be integrated with other aspects of the business process and managed throughout the year. The Annual Report must contain a statement by the university council on sustainability (Department of Higher Education and Training, 2014; Institute of Directors, 2009). More specifically, student numbers and throughput rates must be disclosed in the report. Sustainability is strongly encapsulated in the DUT’s Envision 2030 strategic plan. The Covid-19 pandemic has highlighted the need for business to become agile in the face of uncertainty. DUT has recognised the need for scenario planning and to develop various scenarios against which the continued relevance of Envision 2030 is tested. This process will assist in identifying and managing risks that threaten the universities liquidity. The Enrolment and Efficiency plan of the DUT guides it in ensuring that success and throughput rates of students are continuously improved thereby improving the financial position of the institution as well as contributing to society and economic growth (Durban University of Technology, 2020, 2021). The DUT’s statement on sustainability, in its annual report, identifies institutional culture as a key contributor to sustainability as it creates an environment for performance and shared accountability. Additionally, the continuous improvement in the qualifications, knowledge and training of instructional staff will help to promote

teaching excellence. Council has implemented a number of financial management tools to monitor sustainability (Durban University of Technology, 2021).

- **Risk Management in an organisation**

One of the key focus areas in the King Code on Corporate Governance and the Higher Education Reporting Regulations is risk management. Risk Management involves the "coordination of activities to direct and control the organisation" (PECB, 2015, p.1). As stated by The Institute of Risk Management, "risk management involves understanding, analysing, and addressing risk to make sure that organisations achieve their objectives" (Institute for Risk Management, 2020, p.18). Thus, the purpose of managing risk is to assist the entity to achieve its objectives and to create growth and value for all stakeholders. The concept of risk management, however, seems to be missing from many aspects of the management of higher education institutions. There seems to be a belief by higher education institutions that the concept of risk management is peripheral to them. These sentiments are echoed by Sum and Saad (2017) who states that universities seem to view themselves as ivory towers, believing that risks do not apply to them, with the traditional way of work being guaranteed forever (Sum & Saad, 2017). Moloi concurs with this by asserting that universities have not acknowledged risk management as key to their functioning (Moloi, 2016). Kozlova and Snegurenko add that universities face many threats, both internal and external, that need to be managed (Kozlova & Snegurenko, 2019). Many of the risks confronted by universities are comparable to those faced by other sectors. However, some risks like student enrolment, student funding, research and student throughput are unique to the higher education sector. Moreover, as alluded to by Kozlova and Snegurenko, many risks are related and can impact more than one category of risk.

3.6 RESPONSIBILITIES OF VARIOUS PARTIES RELATING TO RISK MANAGEMENT

In a public higher education institution, powers and responsibilities are delegated to the Council, Vice Chancellor and Senate (Department of Higher Education and Training, 2014). Figure 3.1 illustrates the responsibilities of these key players when it comes to risk management.

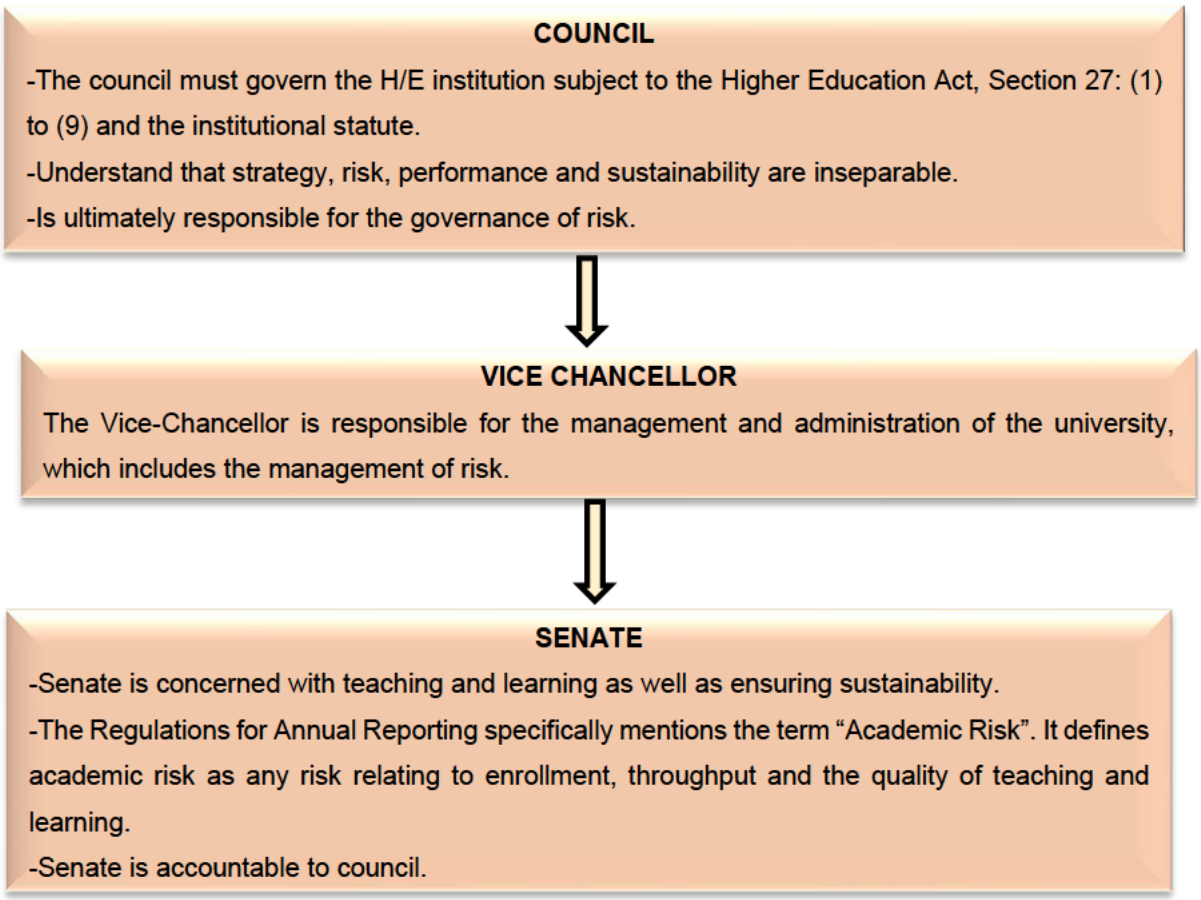


Figure 3.1: Responsibilities of various parties relating to risk management at universities

Source: Department of Higher Education and Training (2014)

Figure 3.1 lays out the responsibilities of the council, vice chancellor and senate, specifically in terms of risk management. The council of a university can be equated to the board of directors in a company. It is responsible for governance, policy development, and assessing whether the university is directed towards achieving its objectives as per its strategic plan. The ultimate responsibility for risk management rests with the university council. The vice chancellor, who is appointed by the council, is responsible for the management and administration of the university. This includes the management of risk. The senate of the university is entrusted with ensuring that the quality of teaching and learning is of an acceptable standard. The Regulations for Annual Reporting specifically mentions the term 'Academic Risk'. It defines academic risk as any risk relating to enrollment,

throughput and the quality of teaching and learning. The senate together with the university management must identify all potential risks relating to academic risk and ensure that suitable interventions are implemented to manage these risks (Department of Higher Education and Training, 2014, p.15).

3.7 THE RISK MANAGEMENT PROCESS

An organisation's risk management process should involve the systematic application of policies, procedures and practices to the activities of communicating and consulting, establishing the context and assessing, treating, monitoring, reviewing, recording and reporting risk. The main purpose of the risk management process is to enable the organisation to assess the existing or potential risks, evaluate the risks by comparing the risk analysis results with the established risk criteria, and treat such risks using the risk treatment options. The organisation should use these criteria in the decision-making process. This study will be guided by the Risk Management Process proposed in the King Code on Corporate Governance. Below is a diagrammatical illustration of the risk management process contained in King 111.

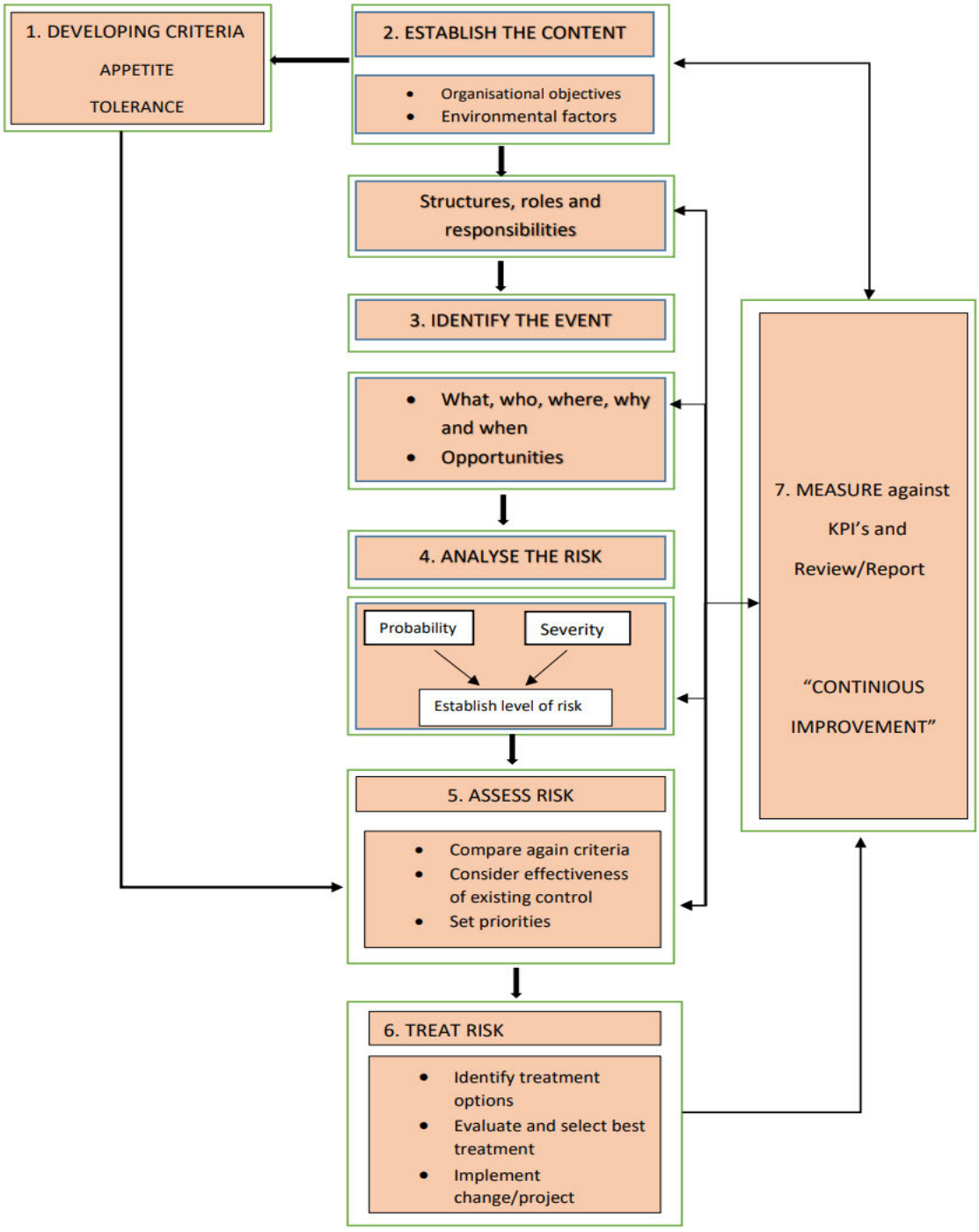


Figure 3.2: Risk management process proposed in the King Code

Source: King 111 Report on Corporate Governance (2009)

Figure 3.2 illustrates the steps in the risk management process. These include establishing the context, risk identification, risk analysis, risk evaluation, risk treatment, communication and consultation, recording and reporting and monitoring and review. A brief discussion of each of these follows:

- **Developing criteria, appetite and tolerance**

The Board (Council) should determine the company's (institutions) appetite for risk i.e. the risks that it is willing to take to achieve the company's objectives. The board should calculate the company's risk-bearing capacity and the tolerance limits for key risks and ensure that these two metrics do not exceed the company's risk appetite. The board should be held accountable in ensuring that the organisation has implemented an effective ongoing process to identify and manage risks. Risks that are low in probability but high in severity (black swan risks) should receive high priority. The best way to manage such risks is to have an effective disaster recovery and business continuity plan that sets out the protocols to be followed in the event of such a disaster.

- **Establishing the context**

Risk management is directly linked to the company's strategic and business processes. Every organisation sets strategic goals to be achieved. As part of the risk process, management needs to identify and understand the potential risks that may be faced in pursuing these objectives. Some risks have to be borne in pursuing opportunity, but a company should mitigate its exposure to losses by responsible risk taking and well-defined strategies. The company needs to consider the environmental context in which it operates. Factors like the economy, political stability, foreign policy and other factors should be considered.

- **Structures, roles and responsibilities**

The responsibility for designing, implementing and monitoring the risk management process as well as ensuring that it is integrated into the day-to-day activities of the company rest with the management. The Chief Executive Officer (Vice Chancellor) should take the lead in relation to the adoption or improvement of the risk management plan with the involvement of management within all levels of the organisation. Ultimately, the primary responsibility for risk management lies with line management which is seen as the first line of defence. This responsibility should be contained in letters of appoint of management. Where the services of risk experts are engaged, such persons are not primarily responsible for risk management and should be regarded as a second line of defence. Assurance functions, such as

internal audit make up the third line of defence and provide assurance on the effectiveness of the system of risk management and interventions implemented. Some organisations may appoint a Chief Risk Officer (CRO) to assist in the execution of the risk management process, however, the accountability to the board remains with the management.

- **Identification of the event**

All events that may trigger a risk should be identified. Specific details about the potential risks such as what the risk is, where it is occurring and when, should be obtained. The potential risk needs to be thoroughly understood.

- **Analyse the risk**

Once the risks have been identified, they should be ranked in terms of the probability of them occurring. Thereafter, the severity needs to be quantified in rands terms.

- **Assess the risk**

After the risks have been analysed, they should be assessed against set criteria. The existing set of internal controls should be reviewed to identify their effectiveness in terms of managing the risk.

- **Treatment of risk**

Finally a decision should be made as to how the risk will be treated.

- **Continuous improvement**

Risk management is not a once off process. Risks should continuously monitored against key performance indicators and improvements should be made to the plan as needed.

The Chairperson of the Council of the DUT in the Annual Report emphasised the importance of compliance with the King Reports on Corporate Governance by universities and the commitment of the DUT in this regard. In terms of risk management, the DUT has a separate Risk Committee which reports to the Audit

Committee. The members of the risk committee are the Vice Chancellor, two members of the Audit Committee, one external member of Council who is not a member of the Audit Committee and the Chief Risk Officer. Some of the duties of the risk committee include evaluating the effectiveness of the risk management systems of the institution, paying attention to significant risks and ensuring that there is a formal risk register. The Executive Management Committee and the University Planning and Resources Forum are responsible for overseeing the regular review and updating of the university's risk register. Detailed disclosures relating to risk management are included in the Annual Report of the institution.

The University recognises that identifying and managing risks are critical in ensuring that its strategic and operational objectives are met and has complied with all the stipulations of the Regulations for Annual Reporting by Public Higher Education Institutions (Department of Higher Education and Training, 2014; Durban University of Technology, 2020).

3.8 CRITIQUES

The findings and recommendations of the King Reports (I, II and III) are, however, not infallible. West states that while The King Codes on Corporate Governance (I, II and III) contains many ethical principles and practices, the fact that compliance is voluntary, is one of its major pitfalls (West, 2006). Dube criticises the King Codes for its lack of representation of African culture and values. Traditional African society is generally communitarian in nature where more emphasis is placed on the group than on the individual and the mode of decision-making is through consensus (Dube, 2016). The insistence on consensus when making decisions conflicts with corporate structures where directors are appointed by only one party, namely, the shareholders, whose interests are generally elevated above those of other stakeholders. Dube and West argue that the urgent need for social justice and the redress of inequalities conflicts in an economic system where development needs are secondary to the immediate pursuit of profit (Dube, 2016; West, 2006). This study acknowledges these shortcomings; however, it must be borne in mind that the inclusive approach in King 111 addresses these shortcomings whereby the legitimate interests of all stakeholders (e.g. employees, students, regulators, the

environment, community, etc.) are considered and not just the shareholders. Perhaps the real shortcoming is the failure by leadership in organisations to execute these recommendations. Additionally, in response to such criticism, many changes have been made in the further iterations of King to address these issues, hence the codes have evolved from the initial King I Code to the King IV Code. Ramalho performed a comparative analysis between King IV and the codes of governance that apply in a select number of jurisdictions, namely, Australia, Brazil, Malaysia, Nigeria, and the UK. The selection of these jurisdictions was accomplished on a view of having a representative sample of major global regions. Her findings were that the King Codes were distinctive and progressive in comparison to the other sampled countries. This study concurs with Ramalho's view and adds that for a third world country that has only experienced democracy for the last twenty-six years, the King Codes on Corporate Governance ought to be commended (Ramalho, 2020).

3.9 RISK MANAGEMENT AND THROUGHPUT

Risk management is a broad corporate governance concept and covers various types of risks faced within a higher education institution. One of these risks is student throughput. Low student throughput can have a huge impact on a universities sustainability. This is due to the loss of potential revenue from government grants as well as tuition fees. The longer a student takes to graduate, the more it costs the university. In addition, students that dropout also cost the institution thousands of rands in lost revenue.

3.10 CONCLUSION

This chapter presented the theoretical framework that will be used for this study. The King Code on Corporate Governance was chosen as the preferred framework. The next chapter discusses the research methodology.

CHAPTER FOUR – RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous chapter provided a description of the theoretical framework used in this study. This chapter discusses the research design, research approach and research methods relevant to this study. In addition, the population, measuring instruments and the data collection process is explained. The chapter concludes with a discussion of the necessary ethical considerations.

4.2 DEFINITION OF RESEARCH

There are many definitions for research. Table 4.1 provides a summary of some of these definitions.

Table 4.1: Definition of Research

AUTHORS	DEFINITION
Kothari (2004)	A scientific and systematic search for relevant information relating to a topic.
Khanzode (2004)	Research requires some form of data collection, analysis and procedures which results in a conclusion.
Leedy & Ormrod (2015)	Research is a systematic investigation whereby information is collected and analysed to reach conclusions.
Saunders et al., (2009)	Research is a process were people, try to learn about a phenomenon, in a systemic way to enhance the individuals' knowledge base.
Creswell (2008)	It is development stages, used to gather and evaluate information, to foster understanding of a subject/ or problem. Research can be defined as a studious inquiry, or examination; particularly investigation, otherwise experimentation, intended for fact-finding and interpretation.
Creswell (2021)	Research is one of many diverse ways of knowing or understanding a process of systematic inquiry that is designed to collect, analyse, interpret, and use the data.

Table 4.1 provides various definitions for research. However, these definitions contain some similarity. Simply put, research entails the use of a systematic

approach used to obtain a better understanding of a relatively new phenomenon. It starts with a question or hypothesis and aims to discover new facts, test theories or solve problems.

4.3 RESEARCH DESIGN

The research design is the general plan or blueprint for the study (Walsh & Wigens, 2003; Blumberg et al., 2014; McGregor, 2017). Others refer to it as the strategies of enquiry (Denzin, 2008; Denzin & Lincoln, 2011; Brinkman et al., 2014). The design must be structured in a way that will enable the research questions to be clearly answered and ensure that all conclusions reached are valid (Hennik et al., 2020; Savin-Baden & Major, 2023). The impulse to pre-determine the data collection techniques and analysis procedures prior to setting out the research objectives should always be avoided (Saunders et al., 2009). As per Blumberg et al. there are three categories of research designs: explorative, descriptive, and casual studies (Blumberg et al., 2014; Leavy, 2022). This study used an explorative research design. The motivation for an explorative approach is, firstly, that the study hopes to make a meaningful contribution to an existing phenomenon. Secondly, this is a social sciences study and an exploratory approach is well suited for this area. Thirdly, mixed methods studies tend to use an exploratory research design (Swedberg, 2020). The study had both quantitative and qualitative data. Both the quantitative and qualitative data was collected concurrently.

4.4 EXPLORATIVE STUDY, DESCRIPTIVE STUDY AND CAUSAL STUDY

Exploratory studies are used when a relatively new phenomenon is being studied with only limited data being available (Reiter, 2017; Swedberg, 2020). It is used to examine an existing phenomenon from a different perspective and discover new insights (Robson, 2002; Ruane, 2016). It is a great aid for research done in the future and is flexible and cost effective. Exploratory research makes use of non-probability sampling (i.e. non-random sampling) like convenience sampling, purposive sampling and snowball sampling (Surbhi, 2016; Lenau et al., 2021). This study is an explorative study.

This study examines the phenomenon of student throughput. This subject has been researched many times through various perspectives. However, this study examines the phenomenon of low student throughput through the lens of risk management and endeavours to discover new insights into this phenomenon.

Descriptive research is made up of the analysis of collected data to characterise a particular group, theoretical concept, or worldly phenomenon (Polkinghorne, 1989; Siedlecki, 2020; Deckert et al., 2023).

Explanatory (causal) research examines the causal relationship between two variables (Saunders et al., 2009; Erickson, 2017). It tries to understand why something takes place and tries to determine future occurrences (Lourens, 2016). Examples of these types of studies include pilot studies, focus groups and case studies.

4.5 RESEARCH APPROACHES

There are two basic research approaches, the inductive and deductive (Gaus, 2017). The inductive approach (qualitative) is related to exploratory studies and is linked to the interpretivist paradigm (Thomas, 2003; Jeb et al., 2017). The deductive approach (quantitative) is related to explanatory studies and is linked to the positivist paradigm (Soiferman, 2010; Azungah, 2018).

4.5.1 Inductive approach

The inductive approach, which is qualitative in nature, is geared towards obtaining a deeper understanding of a phenomenon and obtaining new perspectives about the problem with the aim of generating new theory (Saunders et al. 2009). The theory uses observation, collects data and uses findings from previous studies to arrive at suggestions (Antonakis et al., 2004). The exploratory nature of this study supports the inductive research approach. The interpretivism philosophy often uses the inductive approach were the objective is on theory building (Parvaiz et al., 2016). The interpretivism philosophy will be discussed later in this chapter. This study used and inductive approach with the interpretivism paradigm.

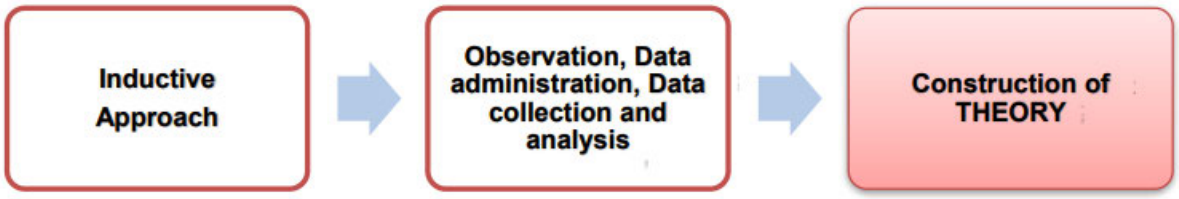


Figure 4.1: Inductive Research Approach

Source: Bhana (2018)

This study used the inductive approach as the main emphasis is on building theory. Policies and processes relative to student throughput were examined, risks and interventions to manage low throughput were identified with a view to exploring new ways to manage the problem.

4.5.2 Deductive approach

The objective of the using deductive approach by a researcher is to select and consent to a well-established theory utilising primary data analysis (Parvaiz et al., 2016; Pearse, 2019). Deductive approach concentrates on theory testing (Antonakis et al., 2004). It begins with a theory and ends with either confirmation or modification of the existing theory (Saunders et al., 2013).

4.6 RESEARCH STRATEGY

Research strategy is the process that will be followed in answering the research questions. The strategy adopted for this research is a case study. A case study is an investigation of a current problem using observations (Verschuren, 2003; Creswell *et al.*, 2016). Case studies are relevant when the research questions need a substantial and in- depth explanation of a social phenomenon. In a case study, evidence is collected from a variety of sources with data needing to converge in a triangulating fashion (Yin, 2009; Hancock et al., 2021). Case studies are used to examine the interrelationships among individuals, groups, organisations events and views (Takahashi & Araujo, 2020).

The Durban University of Technology (DUT) was chosen as the case study for investigation and exploration. The case study explored if there is a relationship between risk management and student throughput at the DUT. The study was conducted in the Accounting cluster on second- and third-year students only. First year students were excluded because the focus of the study was on throughput from first to second year and from second year to third year.

4.7 INTERPRETIVIST PARADIGM

Qualitative studies make the assumption that there are many ways in which reality can be understood. It is the responsibility of the researcher to highlight, understand and explain these realities as well as how they were established (Cohen et al., 2002). Understanding and explaining are the key features of an interpretivist epistemology (Alharahsheh & Pius, 2020)

I used the interpretivist paradigm to try to understand the phenomenon of low student throughput through the lens of risk management. This paradigm allowed me to understand the situation from the perspective of both university management and students, with a view to obtaining new insights.

4.8 RESEARCH METHODS

There are two common approaches to research, namely, qualitative and quantitative research (Brannen, 2017). Recently, a new method is gaining popularity, the mixed methods approach (Strijker, 2020; Dawadi, 2021). This approach uses a combination of both qualitative and quantitative techniques. This study uses a mixed methods approach to ensure reliability and a deeper understanding of human experience. Quantitative research is exploratory in nature while qualitative research looks at categories and explanation (Stevens & Wrenn, 2013; Zefeiti & Mohamad, 2015).

4.8.1 Quantitative research

Quantitative research generally involves the sample collection of some kind of numerical data. This data is then used to make generalisations about the population. Data is typically obtained through surveys, questionnaires, polls and experiments.

Statistical analysis is then performed on this data and the findings may be presented in the form of charts, tables or other forms (Babbie, 2015; In & Lee, 2017). According to Robson (2002) the quantitative method is particularly suitable once a relationship between variables is measured (Robson, 2002). Therefore, the quantitative research method was used in the study to statistically test if there is a relationship between risk management and student throughput (Duckett, 2021).

4.8.2 Qualitative research

"What, why and how?" questions are generally linked to qualitative research. This research explored people's views to a social or human problem (Thanh & Thanh, 2014; Pervin & Mokhtar, 2022). The qualitative approach entails the collection and testing of data using interviews, focus groups and observations amongst others (Olds et al., 2005; Moser & Korstjens, 2018). Exploratory approaches are often paired with qualitative studies. This is well suited since qualitative research provides detailed data which is ideal when exploring new topics (Elliott & Timulak, 2005). Therefore, the qualitative method was used in order to obtain a better understanding about management's role in managing student throughput. The study used semi-structured interviews for the qualitative aspect. The mixed methods approach uses a combination of qualitative and quantitative data. This study used a mixed methods approach. This ensured better reliability and validation and produce the desired results (Zohrabi, 2013; Mckim, 2017).

4.8.3 Mixed methods

Mixed method research involves the collection of both quantitative and qualitative data in order to get a better understanding of the research problem (Creswell & Plano Clark, 2011; Creswell, 2021). Mixed methods entails the combination of focused and probability sampling, open-ended and closed-ended data collection techniques, together with narrative and multivariable analysis that can be used collectively. Wisdom and Creswell (2013) add that the mixed methods approach ensures that there is orderly combination of quantitative and qualitative data in a single study (Wisdom & Creswell, 2013). Mixed methods was used for the three research instruments (Annexure A, Annexure D, Annexure E).

In the mixed method approach, the researcher can use the quantitative approach for one part of the study and the qualitative approach for another part of the study (Emery, 2016; Taherdoost, 2022). Data is collected, probed and mixed to get a detailed understanding of the model being studied then complementing the deficiencies of the quantitative method with the qualitative method (Tashakkori & Teddlie, 2003; Bergin, 2018). This approach leads to a better understanding of the phenomenon (Ivankova et al., 2007; Dawadi et al., 2021; Taherdoost, 2022).

This study adopted a mixed methods approach because it draws on the strength of both methods whilst minimising their weaknesses within a single study (Johnson & Onwuegbuzie, 2004; Şahin & Ozturk, 2019). The quantitative analysis was to establish boundaries around the picture that the data was painting of the sample while the qualitative methodology provided valuable understanding into possible explanations of these quantitative sketches. As such, the two approaches are complementary and provides a more complex picture than if one single approach was used.

There are two categories of research design, sequential design or concurrent design that can be used in a mixed method study. In the sequential design, data is collected in stages, with one type of data being collected first, followed by the other. In a concurrent design, both types of data are collected simultaneously (Jogulu & Pansiri, 2011). This study used a concurrent design. Quantitative data (surveys) and qualitative data (interviews) were collected simultaneously and the findings linked (see Figure 4.2) (Sauro, 2015; Demir & Pismek, 2018). Thus, the concurrent design mixed method would be able to explain whether there is a positive or negative relationship between risk management and student throughput. Therefore, using two methods of data collection will result in gaining a better understanding of both sides of the phenomena, being risk management and student throughput.

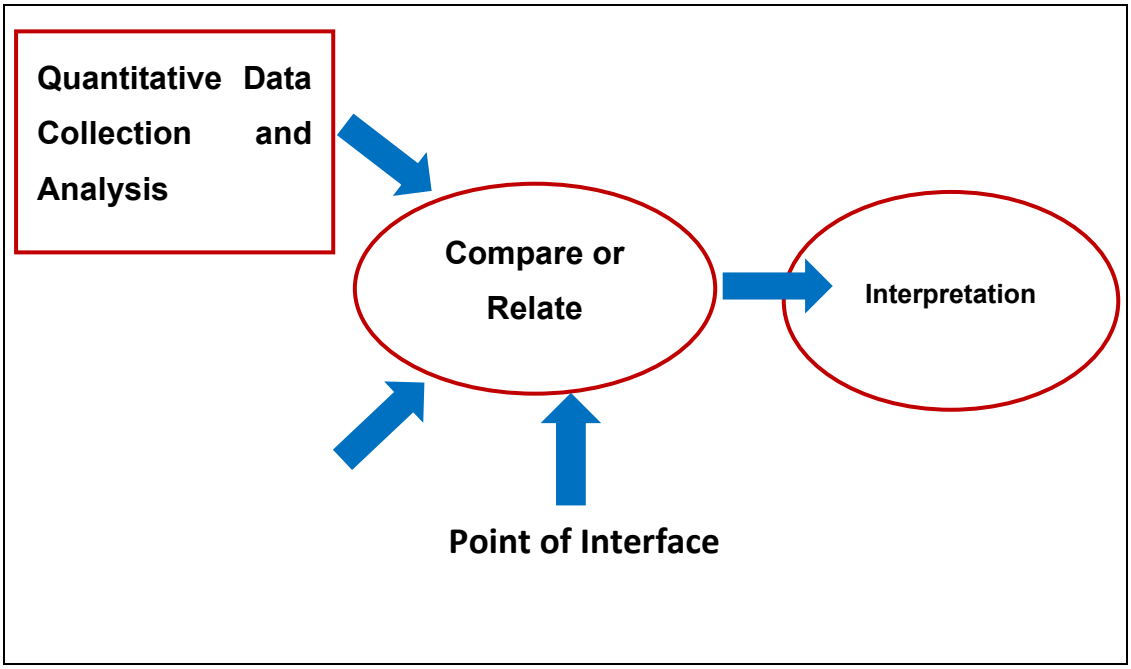


Figure 4.2: Explanatory mixed method

Source: Adapted from Creswell & Plano Clark (2011)

4.9 TYPES OF DATA SOURCES

There are many sources from which data can be collected (Babbie & Mouton, 2001). Data can be grouped as primary or secondary data. Primary data relates to data that is personally collected by the researcher. These include interviews, surveys and focus groups amongst others (Ajayi, 2017; Mazhar, 2021). Secondary data is information that that is available in the public domain and is available to anyone. These can include reports, books, journal articles and websites amongst others (Johnston, 2014; Pederson, 2020). This study used both primary and secondary data.

4.9.1 Primary data sources

Primary data was obtained using data collection tools designed by the researcher. The primary data sources for this study consisted of semi-structured interviews as well as surveys. Primary data adds to the reliability of the research (Olabode et al., 2019).

4.9.2 Secondary data sources

Secondary data is information that has been collected and recorded by others (Blumberg et al., 2014). Although secondary data saves time and money, the researcher must be selective when using this source of information (Creswell & Creswell, 2017). For this study, secondary data was obtained from the DUT reports and website amongst others. The reports were the DUT Annual Reports from 2019 to 2022, academic support policies from CELT and Senate reports on throughput rates. Information on the First Year Student Experience was obtained from the DUT website. In addition, information was obtained through accredited journals, books, government documents, legislation, newspaper articles and websites. Articles relating to the topic was obtained from various accredited journals, books relating to throughput and risk management was viewed. Government documents that were examined included the White Paper on Education and Training: 1995, Higher Education Act (No. 101 of 1997):1997, National Plan for HE SA: 2001, Size and Shape Report: 2001, DHET Strategic Plan: 2010 to 2014, White Paper for Post School Education and Training: November 2013, Statistics on Post School Education and Training: 2013, DHET Annual Report: 2014, Draft Regulations for Annual Reporting by Higher Education Institutions: 2003, DHET Strategic Plan: 2015 to 2019 and the National Development Plan: 2030. Newspaper articles relating to student throughput, access and dropout were reviewed as well as articles on risk management. Websites of the Council of Higher Education, Deloitte, PricewaterhouseCoopers and the Committee of Sponsoring Organisations of the Treadway Commission (COSO) were viewed. I planned to examine similar studies done domestically. However, due to time constraints and restricted access (in some instances) this could not be undertaken.

4.10 DATA COLLECTION PROCESS

4.10.1 Quantitative data collection process

The quantitative data comprised of surveys issued to 2nd and 3rd year students in the Accounting Cluster (Departments of Financial Accounting, Auditing, Tax and Cost and Management Accounting). The total population for this study was one thousand three hundred and seventy-one (N = 1371). The survey contained Likert type questions that used responses from the Likert 5-point scale. The research

instrument consisted of different constructs relative to a number of items. Construct A consisted of biographical information of students; Year of study category, Gender category, Race category and Qualification category. Construct B consists of four dimensions being Lecturers, At-Risk students, Academic support services and Assessments. Lecturers consisted of ten items, At-Risk students consisted of six items, Academic support services consisted of thirteen items and Assessments consisted of ten items. Data management and collection was done by the researcher. All data collection was anonymous which allowed participants to feel comfortable. Individuals were not forced to partake in the study (Babbie & Mouton, 2001).

Table 4.2: Quantitative data collection

Total population	1371
Planned Sample size (N)	300
Realised sample size (n)	108
Response rate	36%
Time Frame	Feb 2020 to Nov 2020

The target population for the study was 1371 students. All student numbers were entered into an excel spreadsheet. Sekaran and Bougie (2016) was used as a guide to obtain the sample size for the study (Annexure F). The sample size obtained was 300. The excel spreadsheet containing the student numbers was used to randomly select 300 students. Thereafter, all 300 students were contacted via e-mail to complete the survey. One hundred and eight students responded (108) resulting in a response rate of 36%.

The poor response rate of 36% can be attributed to the fact that the study was conducted during the Covid-19 pandemic. Most students were not on campus. The survey was put online and students were encouraged to complete the survey. The time frame for the collection of the data was extended by six months. However, despite this the response rate was poor.

4.10.2 Qualitative data collection process

The qualitative instrument used for the study was semi-structured interviews. The researcher emailed participants in May 2020 to participate in the study. A further email was sent to some participants after no response was obtained from the initial email. A suitable date and time to conduct the interviews was agreed upon with participants. All participants were given a letter of information to sign and return (Annexure A). Participants were made aware that the interview would be recorded and any information provided during the interview was confidential. The identity of participants were kept anonymous. Participants were e-mailed and requested to partake in the interviews. Some participants responded speedily while follow-up e-mails were sent to others. The nature of the study was clearly explained to interviewees. In addition, participants had to sign and return a letter of informed consent (Annexure A).

Table 4.3: Qualitative Data Collection

Planned sample size	**6**
Realised sample size	**6**
Response rate	**100%**

Source: Researchers own construction

The sample size comprised six participants within various levels of management at the DUT (Table 4.3).

4.11 SAMPLING TECHNIQUES

There are many sampling techniques that can be used when selecting a sample. It is vital that an effective sampling technique is employed as this has an impact on the research questions. The sampling technique chosen must reflect the characteristics of the population it represents. There are a variety of sampling techniques needed when selecting a sample for a study. Moreover, there is a need to ensure that the sample is effective as it will have an impact on research questions. The decisive test of a sample technique is how well it epitomises the characteristics of the population it purports to represent (Blumberg et al., 2014; Jadhavar, 2023).

The sample design illustrates the method used to choose the sample from the target population (Asiamah et al., 2017). The sampling technique used for the quantitative data collection was simple random sampling (Noor et al., 2022). The quantitative data consisted of surveys given to students. The qualitative data was collected using purposive sampling (Campbell et al., 2020). The qualitative data consisted of semi-structured interviews conducted with various levels of line management and lecturers.

4.12 POPULATION

The population is made up of all the components that the researcher wants information about (Chalmer, 2020; Davis, 2020). It is highly impossible to include the entire population in a study as the researcher will encounter numerous difficulties, especially, time and money (Creswell et al., 2016). The population for this study included all the management, support divisions, administration, staff and students of the DUT.

4.13 TARGET POPULATION FOR QUANTITATIVE AND QUALITATIVE

The target population is a completed group of objects for which the researcher wants to generate sample statistics (Rahman et al., 2022). These results will be used to reach general inferences (Pandey & Pandey, 2021). The target population for the quantitative aspect of the study consisted of all second- and third-year students registered for the Diplomas in Financial Accounting, Auditing, Tax and Cost and Management Accounting at the Durban campus. This included students in the mainstream programme as well as the extended curriculum programme (ECP). The target population was obtained from statistics supplied by the Management Information Services Department at DUT. The identified target population was 1371. The target population for the qualitative component of the study included lecturers, executive management and line management.

4.14 SAMPLING POPULATION FOR QUANTITATIVE DATA COLLECTION

The strategy for selecting the correct participants for a study is known as sampling (Sekaran & Bougie, 2016). The sampling population is a small group of selected elements which are used to draw conclusions about the entire population of

elements (Zefeiti & Mohamad, 2015; Rahman et al., 2022). Samples are selected in order to save time and money. It also results in rich data collection (Campbell, 2020). The sampling population for this study was 300.

4.15 PROBABILITY SAMPLING USE FOR QUANTITATIVE SURVEYS

Probability sampling was used for the quantitative data collection. Probability sampling is a technique were samples are selected from the population using probability/statistical theory. In this method every item in the population has an equal chance of being chosen. Statistics obtained from the sample are used to make inferences about the population. The types of probability sampling include simple random sampling, systematic sampling and stratified sampling amongst others (Rahman et al, 2022).

4.15.1 Simple Random Sampling use for quantitative surveys

This study used the simple random sample technique for data collection. In this method each item in the target population has an equal chance of selection (Basti & Madadizadeh, 2021). For this study, a random sample of second- and third-year students were selected from the Accounting cluster.

Table 4.4: Headcounts for all second- and third-year students in the accounting cluster

Headcount for Specific Qualifications for 2020			
	Level of Study		TOTAL
Qualification	2	3	
ND: Accounting	33	327	
DIP: Accounting	196	0	
ND: Internal Auditing	110	0	
DIP: Internal Auditing	3	101	
ND: Taxation	68	109	
ND: Cost and Management Accounting	180	244	
TOTAL	590	781	1371

Source: Researches own construction

The above table shows the headcounts for all the second- and third-year students in the Department of Financial Accounting, Auditing, Tax and Cost and Management

Accounting (Durban Campus). The sampling population consisted of three hundred and thirty students (330) with one hundred and eight responses (108) resulting in a response rate of 36%. All student numbers were entered into an excel spreadsheet. Sekaran and Bougie (2016) was used to obtain the sample size for the study (Annexure G). The sample size obtained was 300. The excel spreadsheet containing the student numbers was used to randomly select 300 students. Thereafter, all 300 students were contacted via e-mail to complete the survey. One hundred and eight students responded (108) resulting in a response rate of 36%.

4.16 NON-PROBABILITY SAMPLING USE FOR QUALITATIVE INTERVIEWS

Non-probability sampling is a technique were all items in a population do not have an equal chance of selection (Adeoye, 2023). Sample size can be an issue as non-probability sampling is ambiguous and requires a reflection of a wide range of research-specific aspects in each situation (Lewis et al., 2013). Randomisation is not essential in choosing a sample from the population of interest (Etikan et al., 2016). Non-probability sampling types include convenience, purposive, snowball and quota sampling amongst others (Adeoye, 2023). This study used purposive sampling.

4.16.1 Purposive Sampling use for qualitative interviews

In this method, participants are selected on purpose since they are in the best position to provide the data that is required (Sekaran & Bougie, 2016). For this study, semi-structured interviews were conducted with the Dean of the Faculty of Accounting and Informatics, the Chief Risk Officer, two heads of departments in the Accounting cluster and two lecturers. The participants were chosen due to their knowledge and experience on the subject matter. Furthermore, most of the participants are in a position of management and deal with student matters (at-risk students, student performance, throughput rates) on a frequent basis. In addition, since most of the participants are in a management position, they have been part of forums where decisions/policies relating to at-risk students, student performance and throughput were made. This allowed the researcher to obtain information from individuals who are directly involved and can influence student matters. The

participants were contacted through e-mail and a suitable time was selected for the interviews. Interviews lasted between 30 minutes to one hour (Jamshed, 2014).

4.17 MEASURING INSTRUMENT USED FOR THE QUANTITATIVE AND QUALITATIVE SAMPLE

The measuring instrument used for the quantitative aspect of the study was surveys issued to three hundred (300) second- and third-year students in the Accounting cluster at the DUT (Annexure D). The measuring instrument for the qualitative part of the study consisted of semi-structured interviews conducted with various levels of management at the DUT (Annexure E). Questionnaires were prepared in a coherent manner starting with general to specific questions (Buschle et al., 2022).

For the quantitative part of the study, a sample of students were selected using randomisation. Surveys were then issued to the selected students. Scales were used to determine how participants felt about something (Creswell et al., 2016, p.186). A scale includes questions with a range of pre-populated answer choices. The answers can either be numeric or verbal (Sekaran & Bougie, 2016). There are four types of scales that can be used for a survey, namely, nominal scales, ordinal scales, interval scales and ratio scales (Kumar, 2017). This study used a Likert scale which includes interval and ordinal scale.

4.17.1 Likert Scale use for quantitative data collection

The Likert scale is the most widely used psychometric scale for survey research (Kusmaryono et al., 2022) It is used to measure participants' views by including multiple options for a question (South et al., 2022). There are differing opinions about whether a Likert scale is an ordinal scale or interval scale (Joshi et al., 2015; Hutchinson & Chyung, 2023). If the interval scale is used, data can be statistically analysed through the use of Pearson's correlation coefficient (r), Analysis of variance (ANOVA) and regression analysis (Joshi et al., 2015).

This study used the Likert 5-point scale for the quantitative surveys (Annexure D). Participants were able to choose from five response categories. These were as follows: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

4.18 SEMI STRUCTURED INTERVIEWS USED IN GENERATING QUALITATIVE DATA FOR THE STUDY

Interviews are defined as “a two-person conversation, initiated by the interviewer for the specific purpose of obtaining research-relevant information and focused on content specified by research objectives of systematic description, prediction, or explanation” (Liando, 2010). Semi-structured interviews are the most common type of face-to-face interviews as it allows for an in-depth understanding of the phenomena being studied (Adeoye-Olatunde & Olenik, 2021). In order to get rich data during interviews, it is important for the participant to be in a relaxed environment. Therefore, the interview location is of utmost importance. Face-to-face interviews should be conducted in a quiet, private space with no disturbances and adequate sound recording of the conversation (Edwards & Holland, 2013). In order to best achieve the research aim, in-depth semi-structured interviews with open ended questions was used. This resulted in a more vibrant interaction that led to rich, relevant data being collected.

Some of the advantages of interviews include a higher response rate, control over the order of questions and flexibility. Another important advantage is the ability of the interviewer to capture the body language of the participant. Disadvantages include the fact that interviews can consume lots of time, is expensive, the interviewee may be unwilling to discuss sensitive matters and interviewer bias (Monday, 2020; Greenstein & Mosley, 2020).

This study used semi-structured interviews for the qualitative aspect of the study. Some of the interviews were face-to-face while others were online.

4.18.1 Online interviews used for qualitative data for the study

Due to the outbreak of Covid-19 and the introduction of online teaching, the majority of staff worked from home. Due to this, some of the interviews were conducted online.

4.19 VALIDITY AND RELIABILITY OF THE MEASURING INSTRUMENT

Validity and reliability of research instruments are of vast importance to the outcomes of any scientific research (Alshenqueeti, 2014, p.43). Reliability denotes how consistent a set of measurements within an instrument is, whilst validity describes how well an assessment measures what it is intended to measure (Wild and Diggines 2013, p.238; 241). The terms reliability and validity are essential criterion for quality in quantitative concepts, in qualitative concepts the terms credibility, neutrality or confirmability, dependability and transferability are the important criteria for quality (Golafshani, 2003, p.601; cited Lincoln and Guba, 1985). Paradigmatically there is alignment between each of these concepts and the interpretivist paradigm.

4.19.1 Reliability of survey (Quantitative)

Reliability is the extent to which a research method can produce the same result many times (Cohen et al., 2017). Reliability is a concept used for measuring or analysing quantitative research. The research pilot study of quantitative surveys was examined for reliability using the Cronbach Coefficient Alpha Test. The nearer Cronbach's Alpha is to 1 the higher internal reliability would be (Sekaran, 2016). According to Blumberg et al. (2014) about between 20 and 25 suitable constructed questions will be necessary for a reliable Likert 5- point scale (Sekaran, 2016). Significantly, Creswell et al. (2016) suggests that the following guidelines have been accepted by researchers for the interpretation of Cronbach's alpha coefficient, as tabulated below:

Table 4.5: Basic interpretation of Cronbach's alpha coefficient

Cronbach's alpha α	Reliability (estimates of .80 are acceptable)
0.90	**High reliability**
0.80	**Moderate reliability**
0.70	**Low reliability**

Source: Creswell et al. (2016, p.239)

4.19.2 Pre-Testing of interview questionnaire

For the qualitative pre-testing, participants were interviewed using semi-structured interviews. None of the participants used for the pre-testing were used for the actual

data collection. The data administration for and collection for pre-testing was completed between 7 February 2020 to 19 March 2020 by two out of three participants.

4.19.3 Pilot study

A pilot study was undertaken to examine participants' understanding of the research instruments before conducting the main research. Moreover, the pilot study was done to test whether the respondents would be reluctant to answer the survey, ask for clarification, and general feedback. A sample size of 35 quantitative surveys were issued to second- and third-year students. The pilot study employed the purposive sampling technique as it was vital to obtain feedback from respondents that have experience and knowledge regarding the study. The purposive sampling technique ensured appropriate testing of the questionnaire and the necessary revisions were made prior to conducting the main study.

4.20 VALIDITY OF THE SURVEY (QUANTITATIVE)

Validity relates to the quality of research. There are different types of validity. Face validity measures the extent to which an instrument is valid. Content validity measures the extent to which an instrument covers the complete content of the study it is intended to measure. Criterion validity assesses whether an instrument measures what it is supposed to measure and construct validity measures the relationship between two constructs (Creswell et al., 2016). Figure 4.3 illustrates the types of validity. Validity in this study was used by conducting a pilot study.

It examines how representative the study's findings are when compared to similar individuals outside the study (Rose & Johnson, 2020). It is imperative that validity is considered during the design, planning and write-up stages (Creswell et al., 2016; Hunziker & Blankenagel, 2021). According to Lincoln and Guba (1985), threats to validity include researcher bias, reactivity and respondent bias. Anything that affects the researcher's knowledge or assumptions of the study is referred to as researcher bias. Reactivity is when the researcher himself influences the study and respondent bias is when participants are not truthful in their answers. The use of a mixed

methods study promotes validity (Schoonenboom & Johnson, 2017; Harrison et al., 2020).

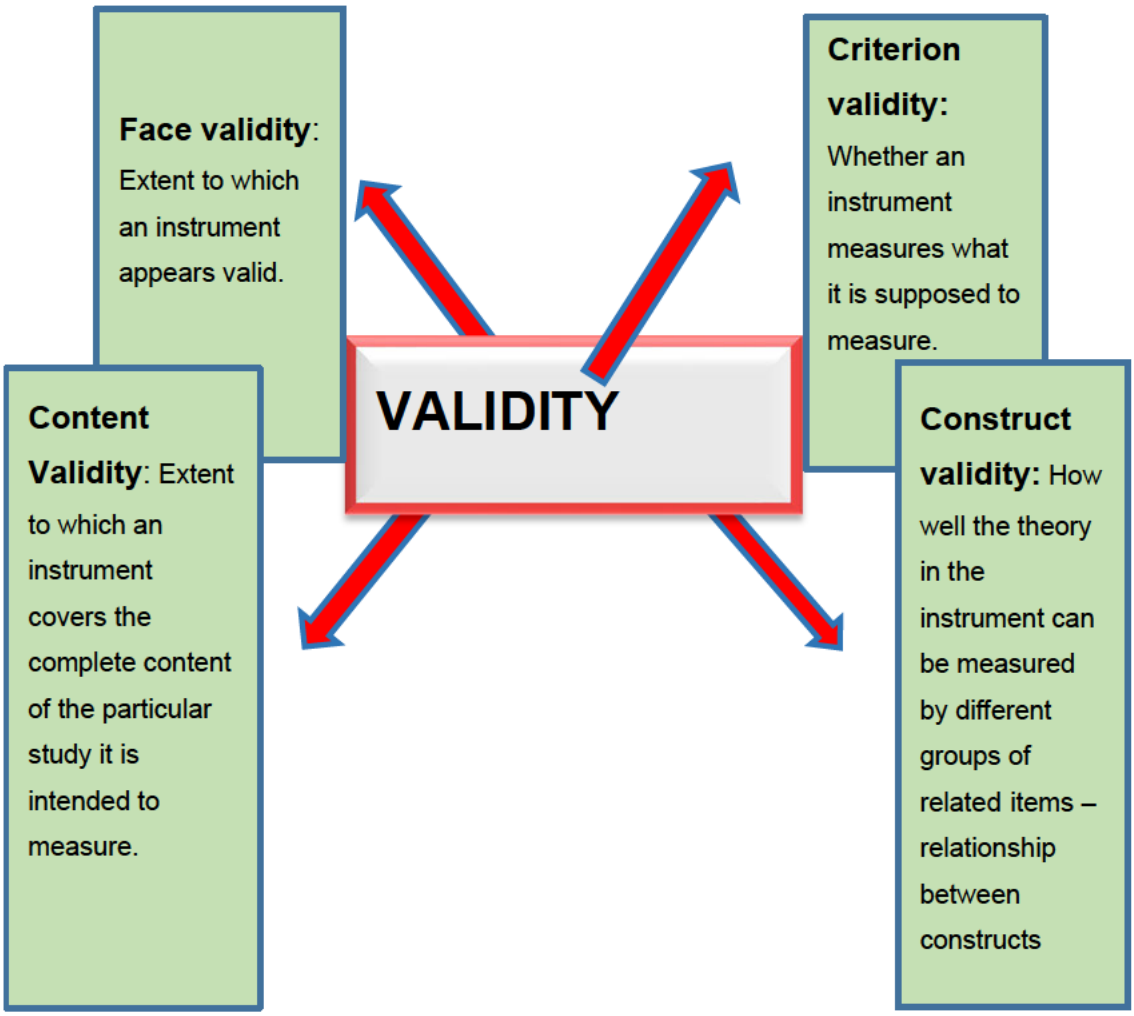


Figure 4.3: Types of validity

Source: Creswell et al (2016, p.238) adapted

External validity looks at whether the findings from the research can be generalised to other situations including real life situations (Creswell et al., 2016; List, 2020). Internal validity looks at the degree to which the findings from the study is representative of the truth in the population. It promotes the credibility or legitimacy of the study (Miles and Huberman, 1994; McEwan, 2020).

4.20.1 Validity and Reliability of Interview Questionnaire (Qualitative)

Table 4.6: Validity and Reliability using the Guba Model

Aspect	Naturalistic Term	Method
Truth Value	**Credibility**	- All research questions were linked to the literature and interviews. - As part of promoting credibility, the ethics clearance letter was provided to participants. - Purposive sampling was used. - Every step of the data collection process was recorded. - An audit trail was created. The final report was taken to participants to determine whether they agreed with the correctness of the findings. - The use of triangulation added to the credibility of the research. Qualitative interviews conducted with management and quantitative surveys issued to students enabled data to be compared.
Applicability	**Transferability**	- Prior to commencement of the interview, participants were debriefed. Rich and thick description was used.
Consistency	**Dependability**	- Recordings of interviews were kept for a period of eight weeks. The interviews were transcribed and the services of an accredited NVIVO statistician were engaged for further data processing.
Neutrality	**Confirmability**	- The services of an accredited transcriber was used to transcribe recorded interviews thereby minimising researcher bias.

Source: Guba's Model (1989) adaptation

Trustworthiness was achieved in the study by complying with the characteristics of credibility, transferability, dependability and confirmability (Gunawan, 2015).

Credibility was achieved by ensuring that all research questions were linked to the literature and interviews, every step of the data collection process was recorded, ethics clearance letters were provided to participants and an audit trail was created. Transferability was achieved by ensuring that participants were debriefed prior to the interview. Dependability was achieved by ensuring that recordings of interviews were kept for a period of eight weeks. The interviews were transcribed and the services of an accredited NVIVO statistician were engaged for further data processing. Confirmability was achieved by ensuring that the services of an accredited transcriber was used to transcribe recorded interviews thereby reducing researcher bias.

4.21 ETHICAL CONSIDERATION

Ethics relates to the conduct of research in a virtuous and responsible manner (Blumberg et al., 2014). When an institutions research ethics committee grants permission to the researcher to issue questionnaires (surveys) or conduct interviews, it is imperative that the rights of participants be respected. It is compulsory when conducting social research to apply for ethical clearance (Shamoo, 2009; Madushani, 2016). It is important to bear in mind that if the participant suffers any negative impact due to the study, the researcher can be held accountable. The professional code of ethics contains five principals that must be adhered when conducting research with participants:

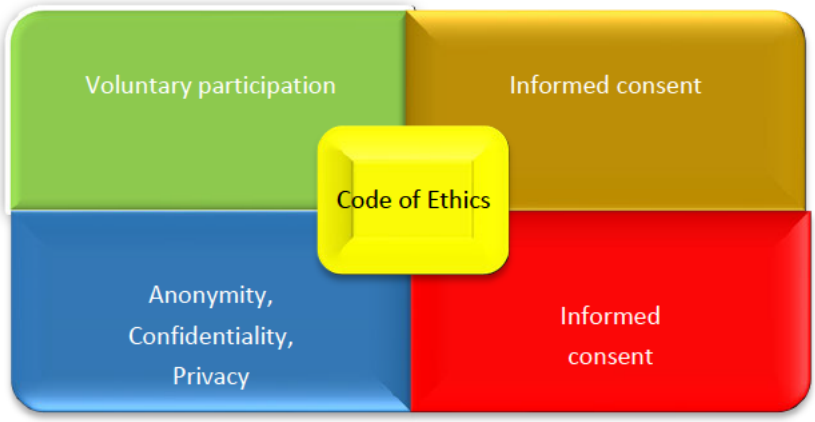


Figure 4.4: Principals to be complied with when conducting research with participants

4.22 INSTITUTIONAL AND INNOVATION COMMITTEE DUT

After the completion of a pilot study the researcher applied and obtained a letter of informed consent from the UKZN dated 15 September 2019. The letter was e-mailed to all participants and respondents on the 17 September 2019. Participants and respondents were informed that their participation was voluntary and they could withdraw at any time. In addition, they were told that all data will be kept in a secure place for five years after which time it will be disposed. All participants' recordings were stored on a memory stick and kept in a safe place. On 21 October 2019 full approval was obtained from the UKZN. On 27 February 2020 a letter was sent to respondents to complete the anonymous survey. On 26 August 2019 a letter of informed consent from the DUT. All protocols were complied with during the data collection phase.

4.23 LETTER OF INFORMED CONSENT

A letter of informed consent was issued by the University of KwaZulu-Natal on 15 September 2019 (Annexure A). The letter contained the topic, aims and objectives and the data collection methods to be used in the study. Participants were made aware that participation is voluntary and participants may withdraw at any time. Contact details were included in the event that participants wanted to address any concerns. In addition, participants were informed that all information obtained will remain confidential. The data will be stored in a secure place for five years after which it will be destroyed.

Participants were given the informed consent and was briefed on the process to be followed. As per Blumberg et al. (2014) assuring informed consent from participants is a matter of completely divulging the procedures of the research instrument prior to requesting for permission to proceed with the study. All participants were given ample time to read through the informed consent and choose whether to engage or withdraw from the study. Cover letters on all questionnaires contained assurances relating to anonymity and confidentiality (Annexure D).

4.24 ANONYMITY AND CONFIDENTIALITY

Once permission is attained from the participant, the researcher is compelled to adhere to the procedures set out by obtaining the right to confidentiality and anonymity by:

a) Notifying participants of their right to refuse to answer any questions.
b) Obtain approval to interview participants.
c) Planning all field interviews.
d) Restricting access to data instruments where participants are identified.
e) Divulging participant information only with written consent.

The respondents were guaranteed privacy, confidentiality and anonymity throughout the study. In addition, an audit trail of all questionnaires was done. Access to all research instruments were restricted by the researcher and the supervisor. This ensured that confidentiality and anonymity was maintained throughout the study. The researcher and the supervisors ensured restricted access to all research instruments; thus, confidentiality and anonymity was upheld throughout the research process of the study.

4.25 SUMMARY

This chapter provided a detailed account on the research process and methodology followed to obtain reliable and valid findings. The chapter commenced with a brief definition of research and research methodology. Thereafter the research design, the research approach as well as the research methods used for the study was discussed. The chapter followed with a conversation of the samples techniques and data collection methods. The chapter concluded with a discussion on the ethical issues surrounding the study.

The next chapter will provide a detailed account on the quantitative analysis and its findings.

CHAPTER FIVE – QUANTITATIVE DATA ANALYSIS

5.1 INTRODUCTION

The previous chapter discussed the research design, research approach and research methods relevant to this study. In addition, the population, measuring instruments and the data collection process were explained. This chapter presents and discusses the findings from the quantitative data collection. Data was collected using surveys issued to second- and third-year diploma students in the accounting cluster at the DUT (Durban Campus). The purpose of this study is to explore the use of risk management to aid student throughput.

The data was collected using surveys issued to second- and third-year students. The data was transferred to SPSS V.24 by an external accredited quantitative statistician to ensure validity and reliability regarding the data results. The primary computation was done using Annexure E. The chapter commences with a discussion of the biographical information relating to the participants of the study, followed by a discussion on the validity and reliability of the research instrument. The chapter concludes with a discussion of the statistics relevant to the dataset. Both descriptive and inferential statistics were used to analyse the dataset. Descriptive statistics describe and summarise the basic features of the dataset and helps with better understanding of the data (Marshall & Jonker, 2010; Mishra et al., 2019; McCarthy et al., 2022). Descriptive statistics apply to mean, ranges, standard deviation, cases of variables and providing information with regards to chosen variables (Emery Sr, 2016, p.54; cited He and Sun, 2014). It only focuses on the sample and helps to assess the shape of the data. The descriptive statistics will use 5-Likert scale statements. The mean is the total of values in a data set divided by the number of observations and is a very strong measure of central tendency (McHugh & Hudson-Barr, 2003; Kaur et al., 2018). The standard deviation looks at the variability or dispersion in the dataset (Kaur et al., 2018). The descriptive tests used were One Sample t Tests and Binomial tests. The One Sample t Test compares a sample mean to a hypothesised value for the population mean to determine whether the two means are significantly different. The binomial test

determines whether a significant portion of respondents select one of a possible two outcomes.

Inferential statistics is where sampled data is used to draw conclusions about the population. Inferential statistics were used for information gathered on academic support services, lecturers, assessments and at-risk students. The inferential statistics that were used were Independent Sample t Tests, Chi-Square Tests and Fishers Exact Test. Independent Sample t Tests are used to compare two sample means from unrelated groups. The purpose of this test is to determine if the samples are different from each other. Chi-Square Tests are used on cross-tabulations to see whether a significant relationship exists between the two variables represented in the cross-tabulation. The chi-squared test applies an approximation assuming the sample is large, while the Fisher's exact test runs an exact procedure especially for small-sized samples.

The planned sample size was 300, however the realised sample size amounted to 108, resulting in a response rate of 36%. The low response rate could be attributed to the closure of the campus for a period, due to the Covid-19 pandemic. The researcher tried to encourage more students to complete the survey by contacting them through e-mail. In addition, a lucky draw competition was announced to entice students.

5.2 BIOGRAPHICAL INFORMATION

This section presents the biographical information relating to the participants of the study. As previously mentioned, data was collected using surveys issued to second- and third-year diploma students in the accounting cluster at the DUT (Durban Campus). The purpose of the biographical information is to assist the researcher to describe the basic characteristics of the data set and show that the sample is representative of the population. Figure 5-1 presents a summary of the biographical information collected through the surveys.

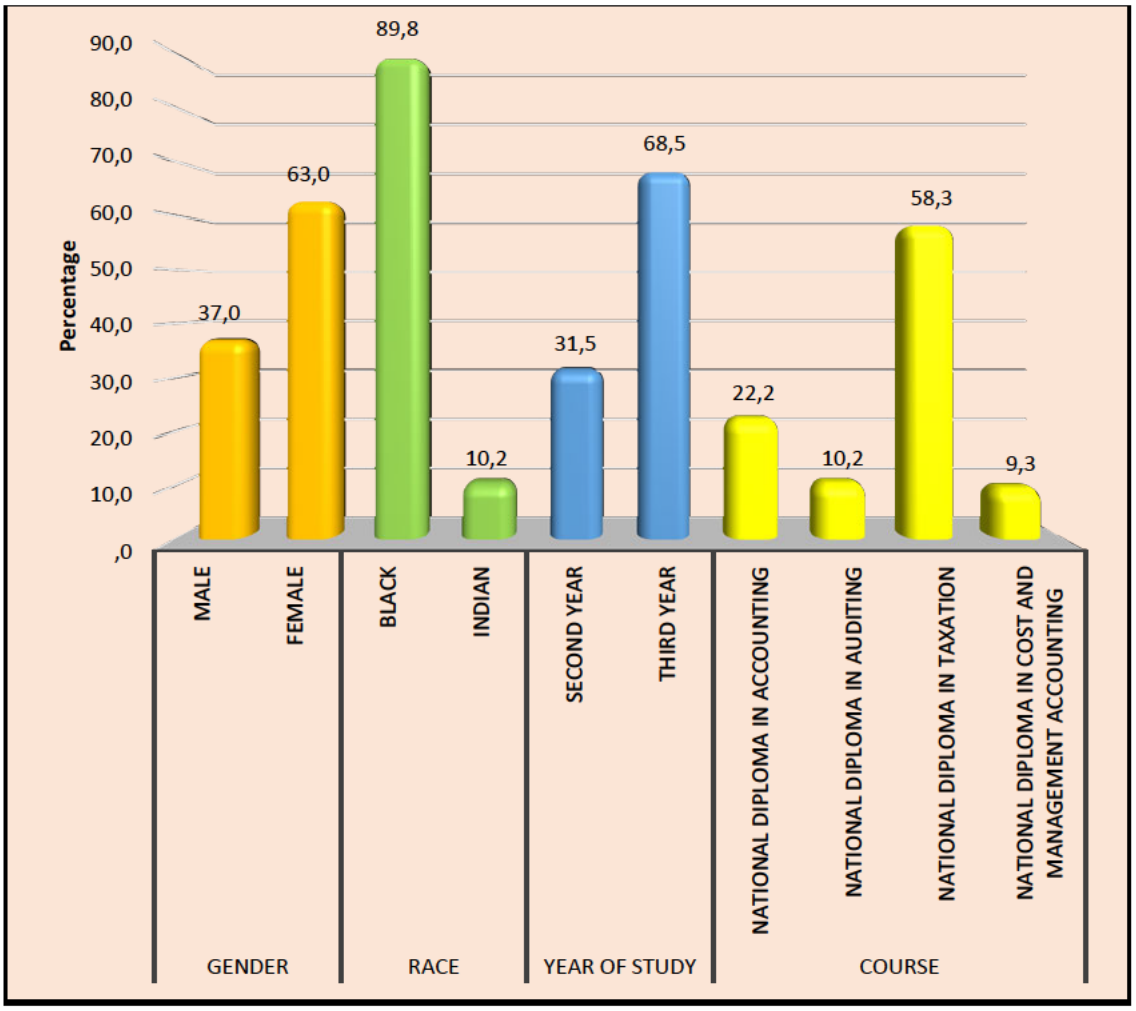


Figure 5.1: Data relating to four characteristics i.e. gender, race, year of study and choice of qualification

As stated previously, the response rate was 36%, resulting in 108 completed surveys. 31.5% (34) of the respondents were second year students while 68.5% (74) were final year students (3rd year). Though most students tend to drop out in the first year of study, dropout does persist in future years (Lourens & Bleazard, 2016). However, the reasons for dropout in future years may be qualitatively different when compared to first year students (Tinto, 1998). There is an inverse relationship between dropout and throughput i.e. the higher the dropout, the lower the throughput.

The vast majority of the respondents were Black 89.8% (97) followed by 10.2% (11) Indians. There were no coloured or white respondents. This corresponds with the

overall demographics of the institution, were the percentage headcount enrolment by race was 87% Black, 10% Indian, 1% Coloured and 1% White (DUT Annual Report, 2019). Research has confirmed that the majority of dropouts are amongst black students, therefore early identification of at risk students can result in effective student support and increased throughput (Ramrathan, 2013).

63% (68) of the respondents were female while 37.0% (40) were male. This corresponds with the institutions overall gender enrolment were the majority of students are female. In terms of gender, male students are more prone to poor performance resulting in lower male throughput (Callaghan, 2020).

The study looked at undergraduate students in the School of Accounting. These consisted of four qualifications, namely, National Diploma in Accounting, National Diploma in Auditing, National Diploma in Tax and the National Diploma in Cost and Management Accounting. The majority of respondents were from the National Diploma in Tax (58.3%) followed by the National Diploma's in Accounting (22.2%), Auditing (10.2%) and Cost and Management Accounting (9.3%).

5.3 STATISTICAL INSTRUMENTS USED FOR DESCRIPTIVE STATISTICS

For the descriptive statistics One sample T Tests and Binomial Tests were used. Below is a discussion of each of these.

5.3.1 One Sample T Tests

The one sample T Test is a statistical hypothesis test used to ascertain whether the mean calculated from sample data gathered from a single group is dissimilar from a designated value specified by the researcher (Gerald, 2018). This test was used because data was gathered on one variable for a single population and there was no comparison being made about groups.

5.3.2 Binomial Test

A binomial test is a statistical test that compares the observed frequencies of two groups to the expected frequencies of a binomial distribution. It is used to determine if the population proportion of a binary variable is equal to a specific value. The

binomial test is used only when there are two categories (Wagner-Menghin, 2005). This test was used because there were only two values and the sample size was small compared to the population.

5.4 STATISTICAL INSTRUMENTS USED FOR INFERENTIAL STATISTICS

Independent Sample t Tests, the Chi-Square Test and the Fishers Exact model were used for the inferential statistics. A discussion of these follows.

5.4.1 Independent Sample t Tests

The Independent Samples t Test compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different (Ross et al., 2017).

5.4.2 Chi-Square Test

A chi-square test is used to help ascertain if observed results are in line with expected results and to rule out that observations are due to coincidence. A chi-square test was appropriate for this study as the data being analysed is from a random sample, and the variable in question is a categorical variable (Pandis, 2016).

5.4.3 Fishers Exact Test

A Fisher's exact test is used to ascertain if there is a statistically consequential difference between the proportions of two groups when there are two nominal variables. The test is appropriate because the row totals and column totals are both fixed by design.

5.5 RELIABILITY AND VALIDITY OF RESEARCH INSTRUMENT

Reliability in the study was obtained using the Cronbach’s alpha. All sections were found to be within an acceptable range.

	Section	Number of Items	Cronbach's Alpha
B		5	0.602
D		10	0.684
F		6	0.605
H		5	0.590
J		3	0.687
L		4	0.655
All items included		38	0.772

Reliability Statistics

The two most important aspects of precision are reliability and validity. Reliability is computed by taking several measurements on the same subjects. A reliability coefficient of 0.60 or higher is considered as "acceptable" for a newly developed construct.

The table reflects the Cronbach's alpha score for all the items that constituted the questionnaire.

The reliability scores for all sections exceed or approximate the recommended Cronbach's alpha value. This indicates a degree of acceptable, consistent scoring for these sections of the research.

5.4 DESCRIPTIVE AND INFERENTIAL ANALYSIS

Research Objective 1: Examine the current policies and academic processes in place relative to student throughput.

Lecturers

Table 5.1: One Sample T Test Results

Lecturers	Responses as Frequency (%)					n	Mean (SD)	T	df	p-value
	Strongly Disagreed	Disagree	Neutral	Agree	Strongly agree					
All lecturers should have practical (industry) experience in their relevant subject matter.	3 (2.8)	5 (4.6)	24 (22.2)	15 (13.9)	61 (56.5)	108	4.17 (1.098)	11.042	107	<.001
A lecturer's qualification and his ability to teach are not necessarily related (ie. a lecturer may be highly qualified BUT he may not be able to teach well).	8 (7.4)	9 (8.3)	16 (14.8)	16 (14.8)	59 (54.6)	108	4.01 (1.308)	8.020	107	<.001 (SA)
I am satisfied with the way my lecturers teach.	1 (0.9)	5 (4.6)	26 (24.1)	43 (39.8)	33 (30.6)	108	3.94 (.905)	10.843	107	<.001 (SA)
Student evaluations (LEO's and SEQ's) should be handed and collected by an independent person/department (ie. lecturers should not be involved).	5 (4.6)	5 (4.6)	34 (31.5)	19 (17.6)	45 (41.7)	108	3.87 (1.153)	7.847	107	<.001
Students are afraid of complaining about lecturers to the department head because they feel that they will be victimised (ie. made to fail).	16 (14.8)	7 (6.5)	20 (18.5)	23 (21.3)	42 (38.9)	108	3.63 (1.431)	4.572	107	<.001

Students get feedback on the outcome of lecturer evaluations.	13 (12.0)	6 (5.6)	35 (32.4)	26 (24.0)	28 (25.9)	108	3.46 (1.271)	3.785	107	<.001
Students sometimes need to pay tutors for extra tuition because they can't understand their lecturers.	23 (21.3)	5 (4.6)	29 (26.9)	17 (15.7)	34 (31.5)	108	3.31 (1.495)	2.188	107	<.001

Average mean values = 3.77, SD = 1.237

Table 5.1 depicts the descriptive and inferential analysis relevant to lecturers:

- All lecturers should have practical (industry) experience in their relevant subject matter had the highest mean value (M = 4.17, SD = 1.098), with most of the respondents agreeing (13.9% agree and 56.5 % strongly agree). This is consistent with Mian et al., (2020) who assert that lecturers need to have relevant industry experience to effectively train students for the world of work (Mian et al., 2020). If lecturers have relevant industry experience it will reduce academic risk. However, a minor percentage disagreed (2.8% strongly disagree and 4.6% disagree) with the statement, and 22.2% were neutral;
- A lecturer's qualification and his ability to teach are not necessarily related (i.e. a lecturer may be highly qualified but he may not be able to teach well) was the second mean value (M = 4.01, SD = 1.308), with most of the respondents agreeing (14.8% agree and 54.6% strongly agree), followed by a minor percentage disagreeing (7.4% strongly disagree and 8.3% disagree), and 14.8% were neutral. Having an appropriate qualification without the ability to teach may increase academic risk;
- I am satisfied with the way my lecturers teach was the third mean value (M = 3.94, SD = 0.905), with most of the respondents agreeing (39.8% agree and 30.6% strongly agree), followed by a minor percentage disagreeing (0.9% strongly disagree and 4.6% disagree), and 24.1% were neutral. This reduces academic risk;
- Student evaluations (LEQ's and SEQ's) should be handed and collected by an independent person/department (i.e. lecturers should not be involved)

was the fourth mean value (M = 3.87, SD = 1.153), with most of the respondents agreeing (17.6% agree and 41.7% strongly agree), followed by a minor percentage disagreeing (4.6% strongly disagree and 4.6% disagree), and 31.5% were neutral. Student evaluations help reduce academic and reputational risk;

- Students are afraid of complaining about lecturers to the department head because they feel that they will be victimised (i.e. made to fail) was the fifth mean value (M = 3.63%, SD = 1.431), with most of the respondents agreeing (21.3% agree and 38.9% strongly agree), followed by a moderate percentage disagreeing (14.8% strongly disagree and 6.5% disagree), and 18.5% were neutral. This finding poses a huge reputational risk for the institution;
- Students get feedback on the outcome of lecturer evaluations was the sixth mean value (M = 3.46, SD = 1.271), with almost half of respondents agreeing (24.0% agree and 25.9% strongly agree), followed by a minority percentage disagreeing (12.0% strongly disagree and 5.6% disagree), and 32.4% were neutral. This finding reduces academic risk;
- Students sometimes need to pay tutors for extra tuition because they cannot understand their lecturers was the lowest mean value (M = 3.31, SD = 1.495), with close to half of respondents agreeing (15.7% agree and 31.5% strongly agree), followed by a fair percentage disagreeing (21.3% strongly disagree and 4.6% disagree), and 26.9% were neutral. This finding increases academic and reputational risk;

Research Objective 1: Examine the current policies and academic processes in place relative to student throughput.

Lecturers

Table 5.2: Binomial Test Results

Item	Frequency (%)		n	p-value
	Yes	No		
I have paid tutors for extra tuition.	43 (39.8)	65 (60.2)	108	P< 0.043
I have complained about a lecturer's teaching.	20 (18.5)	88 (81.5)	108	P< 0.001
I have gotten feedback on ALL the lecturer evaluations that I completed (LEQ's and SEQ's).	29 (26.9)	79 (73.1)	108	P< 0.001

Table 5-2 depicts binomial test information in relation to lecturers:

- A significant percentage (81.5%) indicated that they did not complain about a lecturer's teaching. This reduces academic risk.
- A significant percentage (73.1%) indicated that they did not get feedback on the lecturer evaluations (LEQ's and SEQ's) they completed. This increases academic risk.
- A significant percentage (60.2%) indicated that they did not pay tutors for extra tuition. This reduces academic risk.

Research Objective 1: Examine the current policies and academic processes in place relative to student throughput.

At Risk Students

Information pertinent to At-Risk students was the second independent variable discussed.

Table 5.3: One Sample T Test Results

At-Risk Students	Responses as Frequency (%)					n	Mean (SD)	T	df	p-value
	Strongly disagreed	Disagree	Neutral	Agree	Strongly agree	N/A				
"At Risk" students should be provided with a mentor.	2(1.9%)	5	14	24	63	-108 - 108	4.31 (.990)	13.702	107	.000
I am aware of what an "at risk" student is.	6	3	24	17	58	- 108	4.09 (1.172)	9.685	107	.000
I am aware of the universities "at risk" policy and how it affects me.	14	9	16	31	38	- 108	3.65 (1.376)	4.895	107	.000
Whenever I failed a test, my lecturer always requested a meeting with me to find out why I performed badly and to help me draw up a recovery plan.	31	17	20	7	7	26	2.29 (1.291)	-4.962	81	.000

Average mean values = 3.59, SD = 1.207

Table 5.3 depicts the descriptive and inferential analysis relevant to At-Risk students:

- At Risk students should be provided with a mentor had the highest mean value (M = 4.31, SD = 0.990), with most of the respondents agreeing (22.2% agree and 58.3 % strongly agree). However, a minor percentage disagreed (1.9% strongly disagree and 4.6% disagree) with the statement, and 13% were neutral. This finding suggests that having mentors for at-risk students will reduce academic risk and increase throughput;
- I am aware of what an “at risk” student is, was the second mean value (M = 4.09, SD = 1.172), with most of the respondents agreeing (15.7% agree and 53.7 % strongly agree). However, a minor percentage disagreed (5.6% strongly disagree and 2.8% disagree) with the statement, and 22.2% were neutral. This finding suggests that most learners are aware that they can access academic support services for at-risk students. This reduces academic risk;
- I am aware of the universities “at risk” policy and how it affects me was the third mean value (M = 3.65, SD = 1.376), with most of the respondents agreeing (28.7% agree and 35.2 % strongly agree). However, a fair percentage disagreed (13% strongly disagree and 8.3% disagree) with the statement, and 14.8% were neutral. This reduces academic risk;
- Whenever I failed a test, my lecturer always requested a meeting with me to find out why I performed badly and to help me draw up a recovery plan was the lowest mean value (M = 2.29, SD = 1.291), with a minority of the respondents agreeing (6.5% agree and 6.5 % strongly agree). However, the majority percentage disagreed (28.7% strongly disagree and 15.7% disagree) with the statement, 24.1% found the statement not applicable, and 18.5% were neutral. This suggests that at-risk students may not be getting the attention they deserve which increases academic risk;

Research Objective 1: Examine the current policies and academic processes in place relative to student throughput.

At Risk Students

Table 5.4: Binomial Test Results

Item	Frequency (%)		n	p-value
	Yes	No		
I have failed a test.	57 (53%)	51 (47%)	108	P> 0.631
I have a mentor.	12 (11%)	96 (89%)	108	P< 0.001

Table 5.4 depicts binomial test information in relation to at risk students:

- A significant percentage (53%) indicated that they did fail a test. This increases academic risk.
- A significant percentage (89%) indicated that they did not have a mentor. This increases academic risk as mentors motivate students which could lead to better performance.

Research Objective 2: Identify the current risks in place to manage student throughput rates.

Academic Support Services

Information pertinent to academic support services was the third independent variable discussed.

Table 5.5: One Sample T Test Results

Academic Support Services	Responses as Frequency (%)					n	Mean (SD)	t	df	p-value
	Strongly disagreed	Disagree	Neutral	Agree	Strongly agree					
3.1 I am aware of all the academic support services that the university offers (i.e. tutorial classes, the writing centre, mentoring	1 (0.9)	5 (4.63)	16 (14.8)	28 (25.9)	58 (53.7)	108	4.27 (0.943)	13.975	107	.000
3.2 The academic support services available to students are sufficient.	4 (3.7)	9 (8.3)	33 (30.6)	32 (29.6)	30 (27.8)	108	3.69 (1.080)	6.679	107	.000
3.3 Students need the most academic support in their first year of study.	1 (0.9)	4 (3.7)	7 (6.5)	14 (12.9)	82 (75.9)	108	4.59 (0.843)	19.629	107	.000
3.4 There is a need for more tutorial classes.	7 (6.5)	3 (2.8)	11 (10.2)	16 (14.8)	71 (65.7)	108	4.31 (1.172)	11.579	107	.000
3.5 Currently, tutorial classes are too large.	15 (13.9)	14 (12.9)	43 (39.8)	13 (12)	23 (21.3)	108	3.14 (1.286)	1.123	107	.264

3.6 Tutors are adequately trained to teach.	8 (7.4)	5 (4.6)	32 (29.6)	30 (27.8)	33 (30.6)	108	3.69 (1.172)	6.159	107	.000
3.7 I am responsible for my own academic performance.	-	1 (0.9)	7 (6.5)	23 (21.3)	77 (71.3)	108	4.63 (.650)	26.061	107	.000
3.8 The university is also responsible for my academic performance.	4 (3.7)	4 (3.7)	29 (26.9)	28 (25.9)	43 (39.8)	108	3.94 (1.075)	9.130	107	.000
3.9 The university puts the student's interest first.	12 (11.1)	23 (21.3)	32 (29.6)	23 (21.3)	18 (16.7)	108	3.11 (1.241)	.931	107	.354
3.10 The university listens to student's needs.	17 (15.7)	21 (19.4)	39 (36.1)	13 (12.0)	18 (16.7)	108	2.94 (1.274)	-.453	107	.651

Average mean values = 3.83, SD = 1.074

Table 5.5 depicts the descriptive and inferential analysis relevant to Academic Support Services:

- I am responsible for my own academic performance had the highest mean value (M = 4.63, SD = 0.650), with the vast majority of respondents agreeing (21.3% agree and 71.3 % strongly agree). However, a very minor percentage disagreed (0% strongly disagree and 0.9% disagree) with the statement, and

6.5% were neutral. This reduces academic risk as students are accepting accountability for their performance;

- Students need the most academic support in their first year of study had the second mean value (M = 4.59%, SD = 0.843), with the vast majority of respondents agreeing (12.9% agree and 75.9 % strongly agree). However, a very minor percentage disagreed (0.9% strongly disagree and 3.7% disagree) with the statement, and 6.5% were neutral. This finding correlates with literature where it is found that most students drop out in the first year. This finding reduces academic risk;
- There is a need for more tutorial classes had the third mean value (M = 4.31, SD = 1.172), with the vast majority of respondents agreeing (14.8% agree and 65.7 % strongly agree). However, a very minor percentage disagreed (6.5% strongly disagree and 2.8% disagree) with the statement, and 10.2% were neutral. This finding suggests that there is an urgent need for more tutorials failing in which academic risk will increase;
- I am aware of all the academic support services that the university offers (ie. tutorial classes, the writing centre, mentoring system) had the fourth mean value (M = 4.27, SD = 0.943), with the vast majority of respondents agreeing (25.9% agree and 53.7% strongly agree). However, a very minor percentage disagreed (0.9% strongly disagree and 4.63% disagree) with the statement, and 14.8% were neutral. This finding reduces academic risk;
- The university is also responsible for my academic performance had the fifth mean value (M = 3.94, SD = 1.075), with the vast majority of respondents agreeing (25.9% agree and 39.8% strongly agree). However, a minor percentage disagreed (3.7% strongly disagree and 3.7% disagree) with the statement, and 26.9% were neutral;
- Tutors are adequately trained to teach had the sixth mean value (M = 3.69, SD = 1.172), with the majority of respondents agreeing (27.8% agree and 30.6% strongly agree). However, a minor percentage disagreed (7.4% strongly disagree and 4.6% disagree) with the statement, and 29.6% were neutral. This reduces academic risk;
- The academic support services available to students are sufficient had the seventh mean value (M = 3.69, SD = 1.080), with the majority of respondents

agreeing (29.6% agree and 27.8% strongly agree). However, a minor percentage disagreed (3.7% strongly disagree and 8.3% disagree) with the statement, and 30.6% were neutral. This reduces academic risk;

- Currently, tutorial classes are too large had the eighth mean value (M = 3.14, SD = 1.286), with a moderate of respondents agreeing (12% agree and 21.3% strongly agree). However, a moderate percentage also disagreed (13.9% strongly disagree and 12.9% disagree) with the statement, and 39.8% were neutral. This increases academic risk;
- The university puts the student's interest first had the ninth mean value (M = 3.11, SD = 1.241), with a fair amount of respondents agreeing (21.3% agree and 16.7% strongly agree). However, a fair percentage also disagreed (11.1% strongly disagree and 21.3% disagree) with the statement, and 29.6 % were neutral;
- The university listens to student's needs had the tenth mean value (M = 2.94, SD = 1.274), with a minority of respondents agreeing (12.0% agree and 16.7% strongly agree). However, a fair percentage also disagreed (15.7% strongly disagree and 19.4% disagree) with the statement, and 36.1% were neutral. This indicates that the university could do more to listen to students needs otherwise academic risk will increase;

Research Objective 2: Identify the current risks in place to manage student throughput rates.

Academic Support Services

Table 5.6: Binomial Test Results

Item	Frequency (%)		n	p-value
	Yes	No		
I have made use of the academic support services.	87 (81%)	21 (19%)	108	P< 0.001
I attend all tutorial classes relevant to my courses.	87 (81%)	21 (19%)	108	P< 0.001
I have complained about my tutors poor teaching skills.	22 (20%)	86 (80%)	108	P< 0.001

Table 5.6 depicts binomial test information in relation to at academic support services:

- A significant percentage (87%) indicated that they made use of academic support services. This reduces academic risk.
- A significant percentage (87%) indicated that they have attended all tutorial classes relevant to their subjects. This reduces academic risk.
- A significant percentage (80%) indicated that they did not complain about their tutors poor teaching skills. This reduces academic risk.

Research Objective 2: Identify the current risks in place to manage student throughput rates.

Assessments

Information pertinent to assessments was the fourth independent variable discussed.

Table 5.7: One Sample T Test Results

Assessments	Responses as Frequency (%)					n	Mean (SD)	T	df	p-value
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree					
7. I prefer written tests to online tests.	21 (19.4)	11 (10.2)	20 (18.2)	18 (16.7)	38 (35.2)	108	3.38 (1.527)	2.584	107	.011
7.2 Online tests do not prepare me for written examinations.	21 (19.4)	16 (14.8)	29 (26.9)	11 (10.2)	31 (28.7)	108	3.14 (1.475)	.978	107	.330
7.3 Students are able to give input as to whether they want online or	24 (22.2)	23 (21.3)	26 (24.07)	13 (12.0)	22 (20.4)	108	2.87 (1.428)	-.943	107	.348
7.4 Multiple choice assessments (i.e. tests and exams) do not prepare	28 (25.9)	16 (14.8)	17 (15.7)	18 (16.7)	29 (26.9)	108	3.04 (1.564)	.246	107	.806

7.5 Lectures and tutorials adequately prepare me for assessments (ie. tests and exams).	2 (1.9)	4 (3.7)	21 (19.4)	27 (25)	54 (50)	108	4.18 (.994)	12.298	107	.000
7.6 We write too few tests.	53 (49.1)	20 (18.5)	23 (21.3)	3 (2.8)	9 (8.3)	108	2.03 (1.256)	-8.041	107	.000
7.7 My lecturers go over the tests and their solutions with us within 10 days after writing the test.	26 (24.1)	20 (18.5)	26 (24.1)	12 (11.1)	24 (22.2)	108	2.89 (1.468)	-.786	107	.433

Average mean values = 3.08, SD = 1.387

Table 5.7 depicts the descriptive and inferential analysis relevant to assessments:

- Lectures and tutorials adequately prepare me for assessments (i.e. tests and exams) had the highest mean value (M = 4.18, SD = 0.994), with a majority of respondents agreeing (25% agree and 50% strongly agree). However, a minority percentage also disagreed (1.9% strongly disagree and 3.7% disagree) with the statement, and 19.4% were neutral. This reduces academic risk;
- I prefer written tests to online tests had the second mean value (M = 3.38, SD = 1.527), with a moderate percentage of respondents agreeing (16.7% agree and 35.2% strongly agree). However, a fair percentage also disagreed (19.4% strongly disagree and 10.2% disagree) with the statement, and 18.2% were neutral;
- Online tests do not prepare me for written examinations had the third mean value (M = 3.14, SD = 1.475), with a moderate percentage of respondents

agreeing (10.2% agree and 28.7% strongly agree). However, a fair percentage also disagreed (19.4% strongly disagree and 14.8% disagree) with the statement, and 26.9 % were neutral. The university should have more written than online tests. Online tests could increase academic risk;

- Multiple choice assessments (i.e. tests and exams) do not prepare students for the working world had the fourth mean value (M = 3.04, SD = 1.564), with a fair percentage of respondents agreeing (16.7% agree and 26.9% strongly agree). However, a fair percentage also disagreed (25.9% strongly disagree and 14.8% disagree) with the statement, and 15.7% were neutral. Tests that comprise mainly multiple-choice questions could increase academic risk;
- My lecturers go over the tests and their solutions with us within 10 days after writing the test had the fifth mean value (M = 2.89, SD = 1.468), with a minority of respondents agreeing (11.1% agree and 22.2% strongly agree). However, a moderate percentage disagreed (24.1% strongly disagree and 18.5% disagree) with the statement, and 24.1 % were neutral. This could increase academic risk;
- Students are able to give input as to whether they want online or written tests had the sixth mean value (M = 2.87, SD = 1.428), with a minority of respondents agreeing (12% agree and 20.4% strongly agree). However, a moderate percentage also disagreed (22.2% strongly disagree and 21.3% disagree) with the statement, and 24.07% were neutral;
- We write too few tests had the seventh mean value (M = 2.03, SD = 1.256), with a minority of respondents agreeing (2.8% agree and 8.3% strongly agree). However, a majority percentage disagreed (49.1% strongly disagree and 18.5% disagree) with the statement, and 21.3% were neutral. This reduces academic risk;

Research Objective 2: Identify the current risks in place to manage student throughput rates.

Assessments

Table 5.7: Binomial Test Results

Item	Frequency (%)		n	p-value
	Yes	No		
1. I have written an online test.	104 (96%)	4 (4%)	108	P< 0.001
2. I have had input on whether I want an online or written assessment (i.e. tests and exams).	37 (34%)	71 (66%)	108	P< 0.001
3. I have written multiple choice assessments (i.e. tests and exams).	104 (96%)	4 (4%)	108	P< 0.001
4. 4 I have failed multiple choice assessments (i.e. tests or exams).	33 (31%)	75 (69%)	108	P< 0.001

Table 5.7 depicts binomial test information in relation to at assessments:

- A significant percentage (96%) indicated that they did write online tests.
- A significant percentage (71%) indicated that they did not have input on whether they prefer online or written assessments. This could increase academic risk.
- A significant percentage (96%) indicated that they did write multiple choice assessments (i.e. tests and exams). This could increase academic risk as students preferred written tests.
- A significant percentage (75%) indicated that they did fail multiple choice assessments i.e. tests and exams. This indicates that the use of multiple-choice tests can significantly increase academic risk.

Independent T Tests

Independent Sample t Tests were applied to the three demographic variables of level of study, gender and race to determine if there were significant differences.

Level of Study

Independent Sample t Test

	Level of study	N	Mean	Std. Deviation	T	Df	p-value
Students sometimes need to pay tutors for extra tuition because they cannot understand their lecturers.	Second year	34	2.71	1.426			
	Third year	74	3.59	1.452	-2.971	106	.004
My lecturers go over the tests and their solutions with us within 10 days after writing the test.	Second year	34	2.38	1.498	-2.488	106	.014
	Third year	74	3.12	1.404			
Whenever I failed a test, my lecturer always requested a meeting with me to find out why I performed badly and to help me draw up a recovery plan.	Second year	25	1.80	.913	-2.746	67.161	.008
	Third year	57	2.51	1.377			

The results of the independent sample t test applied on the level of study were as follows:

• Third years agree significantly more that sometimes they need to pay tutors for extra tuition because they cannot understand their lecturers, t (106) = -2.971, p=.004.

• Third years agree significantly more that their lecturers go over the tests and solutions within ten days after writing the test, t (106) = -2.488, p= .014.

• Third years agree significantly more that whenever they failed a test their lecturers always requested a meeting with them to find out why they performed badly and to help in drawing up a recovery plan, t (67.161) = -2.746, p= .008.

Gender

Independent Sample t Test

	Gender	N	Mean	Std. Deviation	T	Df	p-value
I am responsible for my own academic performance.	Male	40	4.43	.781	-2.336	60.345	.023
	Female	68	4.75	.529			
The university listens to student's needs.	Male	40	3.28	1.301	2.101	106	.038
	Female	68	2.75	1.226			
We write too few tests.	Male	40	2.35	1.331	2.011	74.143	.048
	Female	68	1.84	1.180			

The results of the independent sample t test applied to gender were as follows:

• Females agree significantly more that they are responsible for their own academic performance, t (60.345) = -2.336, p= .023. Males agree significantly more that the university listens to student's needs, t (106) = 2.101, p= .038. Males agree significantly more that they write too few tests, t (74.143) = 2.011, p= .048.

Race

Group Statistics

	Race	N	Mean	Std. Deviation	T	Df	p-value
In order to increase the graduation rate, most of the academic support should be provided in the first year of study.	Black	97	4.29	1.020	2.227	106	.028
	Indian	11	3.55	1.293			
Tutors are adequately trained to teach.	Black	97	3.78	1.129	2.397	106	.018
	Indian	11	2.91	1.300			
The academic support services available to students are adequate.	Black	97	3.76	1.058	1.981	106	.049
	Indian	11	3.09	1.136			

The results of the independent sample t test applied to race were as follows:

- Black students agree significantly more that academic support services available to students are adequate, t (106) = 1.981, p= .049. This could reduce academic risk for black students.
- Black students agree significantly more that tutors are adequately trained to teach, t (106) = 2.397, p= .018. This could reduce academic risk for black students.
- Black students agree significantly more that in order to increase the graduation rate, most of the academic support should be provided in the first year of study, t (106) = 2.227, p= .028. This could reduce academic risk for black students.

Pearson Chi Square Tests

Pearson Chi Square Tests were applied to three demographic variables of level of study, race and qualification.

Year of Study

Pearson Chi Square Test

			I have made use of the academic support services.		
			Yes	No	Total
Year of study	Second year	Count	23	11	34
		Expected Count	27.4	6.6	34.0
		% within Year of study	67.6%	32.4%	100.0%
		Std. Residual	-.8	1.7	
	Third year	Count	64	10	74
		Expected Count	59.6	14.4	74.0
		% within Year of study	86.5%	13.5%	100.0%
		Std. Residual	.6	-1.2	
Total		Count	87	21	108
		Expected Count	87.0	21.0	108.0
		% within Year of study	80.6%	19.4%	100.0%

Pearson Chi Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	**5.279**	**1**	**.022**		
Continuity Correction	4.145	1	.042		
Likelihood Ratio	4.983	1	.026		
Fisher's Exact Test				.035	.023
Linear-by-Linear Association	5.230	1	.022		
N of Valid Cases	108				

- A significant number of second years (11, 32.4%) have not made use of academic support services, p=.022.

Pearson Chi Square Test

			I have paid tutors for extra tuition.		
			Yes	No	Total
Year of study	Second year	Count	5	29	34
		Expected Count	13.5	20.5	34.0
		% within Year of study	14.7%	85.3%	100.0%
		Std. Residual	-2.3	1.9	
	Third year	Count	38	36	74
		Expected Count	29.5	44.5	74.0
		% within Year of study	51.4%	48.6%	100.0%
		Std. Residual	1.6	-1.3	
Total		Count	43	65	108
		Expected Count	43.0	65.0	108.0
		% within Year of study	39.8%	60.2%	100.0%

Pearson Chi Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	**13.055[a]**	**1**	**.000**		
Continuity Correction	11.571	1	.001		
Likelihood Ratio	14.280	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	12.935	1	.000		
N of Valid Cases	108				

- A significant number of second years (29, 85.53%) have not paid tutors for extra tuition, p=.000. This could reduce academic risk for students.
- A significant number of third years (38, 51.4%) have paid tutors for extra tuition, p=.000. This could increase academic risk for students.

Race

Pearson Chi Square Test

			I have complained about my tutors poor teaching skills.		
			Yes	No	Total
Race	Black	Count	15	82	97
		Expected Count	19.8	77.2	97.0
		% within Race	15.5%	84.5%	100.0%
		Std. Residual	-1.1	.5	
	Indian	Count	7	4	11
		Expected Count	2.2	8.8	11.0
		% within Race	63.6%	36.4%	100.0%
		Std. Residual	3.2	-1.6	
Total		Count	22	86	108
		Expected Count	22.0	86.0	108.0
		% within Race	20.4%	79.6%	100.0%

Pearson Chi Square Test

			I have complained about my tutors poor teaching skills.		
			Yes	No	Total
Race	Black	Count	15	82	97
		Expected Count	19.8	77.2	97.0
		% within Race	15.5%	84.5%	100.0%
		Std. Residual	-1.1	.5	
	Indian	Count	7	4	11
		Expected Count	2.2	8.8	11.0
		% within Race	63.6%	36.4%	100.0%
		Std. Residual	3.2	-1.6	
Total		Count	22	86	108
		Expected Count	22.0	86.0	108.0
		% within Race	20.4%	79.6%	100.0%

Pearson Chi Square Test

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14.134[a]	1	.000		
Continuity Correction[b]	11.320	1	.001		
Likelihood Ratio	11.216	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	14.003	1	.000		
N of Valid Cases	108				

- A significant number of Indians (7, 63.6%) have complained about their tutors' poor teaching skills, p=.001.

Qualification

Pearson Chi Square Test

			I have paid tutors for extra tuition.		
			Yes	No	Total
Course	National diploma in Accounting	Count	10	14	24
		Expected Count	9.6	14.4	24.0
		% within Course	41.7%	58.3%	100.0%
		Std. Residual	.1	-.1	
	National diploma in Auditing	Count	3	8	11
		Expected Count	4.4	6.6	11.0
		% within Course	27.3%	72.7%	100.0%
		Std. Residual	-.7	.5	
	National diploma in Taxation	Count	22	41	63
		Expected Count	25.1	37.9	63.0
		% within Course	34.9%	65.1%	100.0%
		Std. Residual	-.6	.5	
	National diploma in Cost and Management Accounting	Count	8	2	10
		Expected Count	4.0	6.0	10.0
		% within Course	80.0%	20.0%	100.0%
		Std. Residual	2.0	-1.6	
Total		Count	43	65	108
		Expected Count	43.0	65.0	108.0
		% within Course	39.8%	60.2%	100.0%

- A significant number of Indians (7,63.6%), have paid tutors for extra tuition p=.001. This could increase academic risk for Indian students.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	8.125[a]	3	.043	.043		
Likelihood Ratio	8.190	3	.042	.049		
Fisher's Exact Test	**7.732**			**.048**		
Linear-by-Linear Association	.887[b]	1	.346	.351	.202	.054
N of Valid Cases	108					

- A significant number of students the National Diploma in Cost and Management Accounting (8, 80.0%), have paid tutors for extra tuition p=0.000. This could increase academic risk for Cost and Management Accounting students.

5.5 CONCLUSION

The chapter explored evidence of the risks and interventions relating to student throughput rates at a public South African Higher Education Institution. The chapter commenced with descriptive statistical analysis that was conducted for the biographical information of the one independent variable and one dependent variable from the sample population of the study. The findings from the questionnaire standardisation revealed face and content and construct validity and reliability of the measuring instrument. Inferential statistical analysis was performed to determine significance difference and significant relationships between risk management and student throughput. Inferential statistics comprised Independent Sample T Tests, Chi-Square Tests and Fishers Exact Test. The next chapter focuses on qualitative data analysis and interpretations in relation to risk management and throughput. Moreover, the chapter will embark on a detailed discourse utilising thematic analysis to better understand the qualitative data. Thematic analysis will support better excavation of the main and subthemes that will be presented in the next chapter of the study.

CHAPTER SIX

6.1 INTRODUCTION

The previous chapter presented and discussed the findings from the quantitative data gathered from students. The purpose of this chapter is to present and analyse the qualitative data gathered through semi structured interviews conducted with various levels of management at the DUT. The sample size of the study was n = 7 participants that were selected using the purposive sampling technique. The purposive sampling technique supported the biographical information percentages of participants that were willing to constructively contribute to the study. The biographical information of job title, age, gender, and experience enabled a better understanding of risk management and throughput rates at the institution. The qualitative interviews were the primary tools that were used to collect data from management at the institution (Annexure F). The qualitative data findings will facilitate triangulation in Chapter Seven of the study. The qualitative method can be reported as a sense of story that embraces attention to detail, explanatory language, direct quotes from participants observed or interviewed and thematic observation (Van Niekerk, 2005; Hammarberg et al., 2016). The findings were derived from the empirical field research and analysis that were obtained from the qualitative data.

All interviews were transcribed by an external transcriber to ensure neutrality, without any input or bias from the researcher. Interviews were transcribed verbatim into MSWord and given to an external accredited NVIVO statistician utilising NVIVO version N10. Thereafter, the NVIVO statistician used the code recode data technique and thematic analysis to excavate important themes of the study. The employment of external technical support for audio-interview transcribing and NVIVO statistician ensured trustworthiness, objectivity, impartiality and reduction in researcher biasness in the qualitative research. Trustworthiness in qualitative research is also evaluated based on a number of principles developed from Gubas' model which includes the following; dependability, credibility, confirmability and suitability (transferability) (Lincoln and Guba, 1985; Krefting, 1991; Carpenter & Jenks, 2003).

6.2 BIOGRAPHICAL INFORMATION OF PARTICIPANTS

The biographical information relating to the participants are presented below. Participants were chosen using purposive sampling.

Table 6.1: Job Category

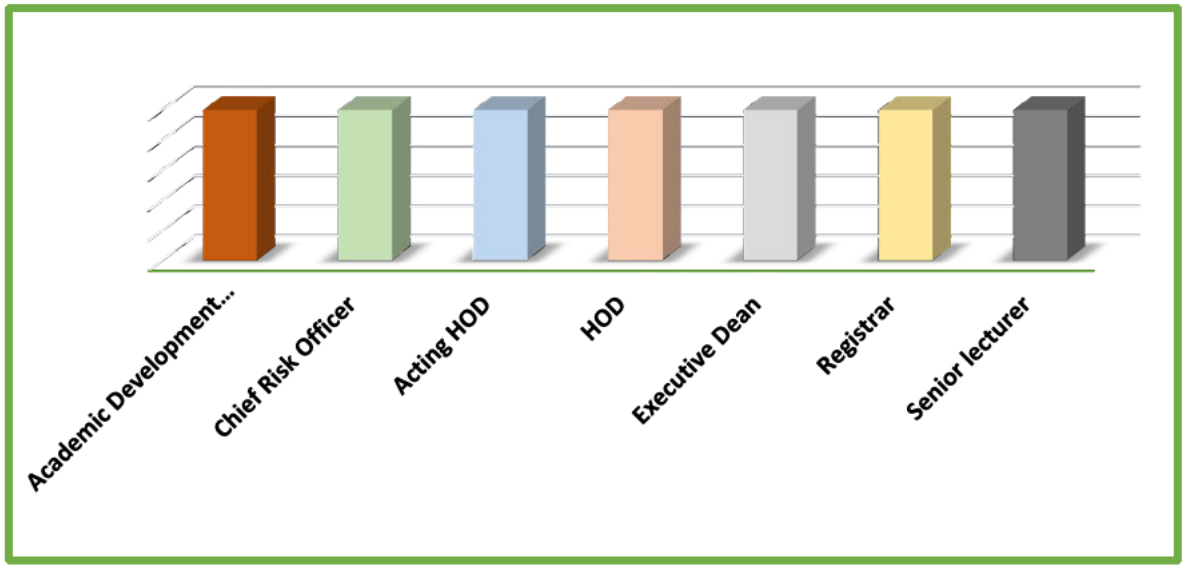


Table 6.1 presents the job titles of all the participants that were interviewed. There was an equal distribution of key figures at the institution. This enriched the data by providing a diversity of views and perceptions.

Table 6.2: Number of years at current position

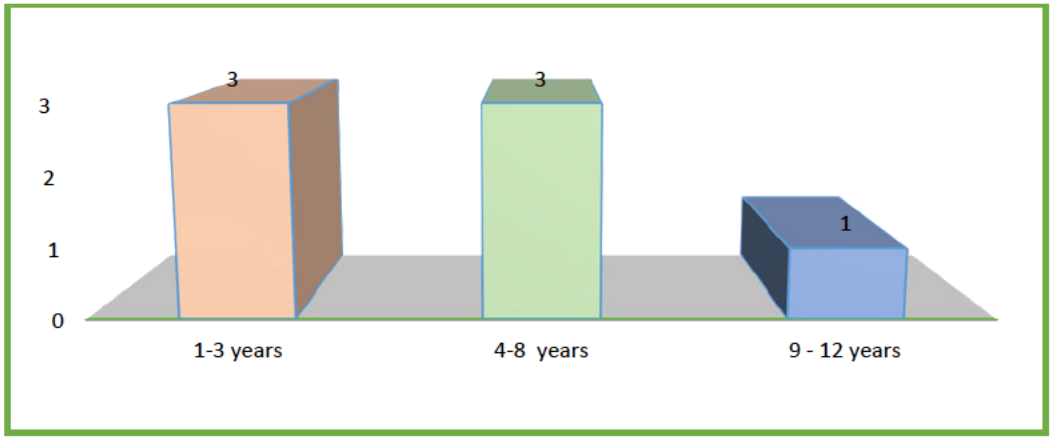


Table 6.2 depicts the numbers of years that the participants were in their current position. Most respondents were at the institution for over 4 years. This indicates experience at the institution and supports the strength of the study.

Table 6.3: Gender

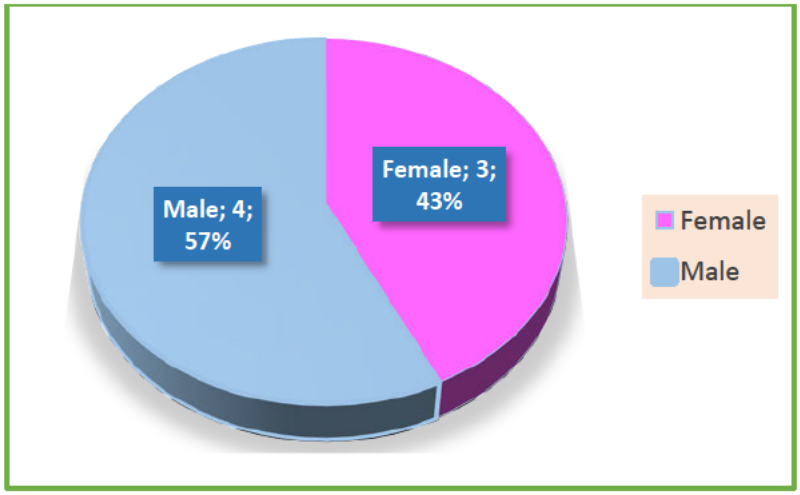


Table 6.3 depicts the gender of the participants. There was an almost equal distribution of gender, which also gives the advantages of a gender-equal view.

Table 6.4: Age

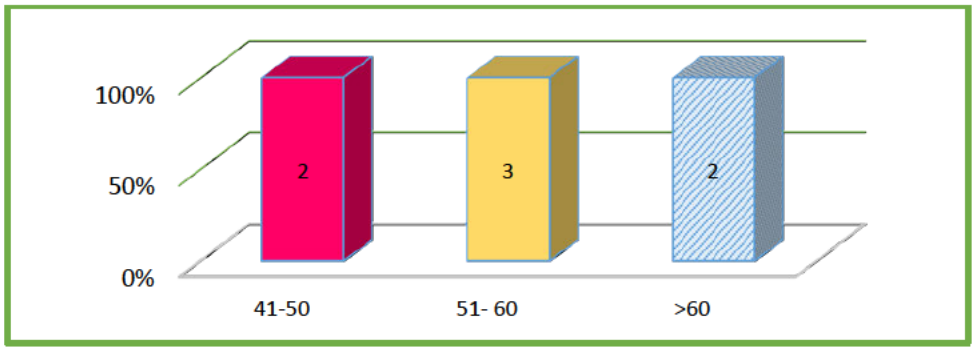


Table 6.4 depicts the age of the participants. All respondents were over the age of 40 thereby indicating a high level of experience considering the positions they occupied.

The above section presented the biographical details relating to participants who took part in the semi-structured interviews. The biographies of the participants

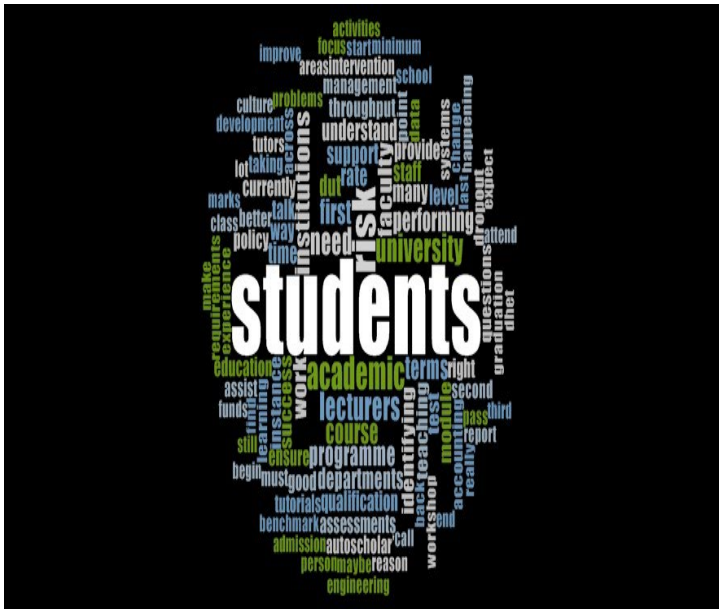
reflect a diversity of individuals from various levels of management who are well suited to answer the questions relevant to the study.

6.3 DEFINITIONS OF QUALITATIVE TECHNIQUES USED

6.3.1 Word Cloud

A word cloud is a visible representation of words in different proportions. As the word appears more predominantly, the word becomes more enlarged.

Figure 6.1: Word Cloud of themes

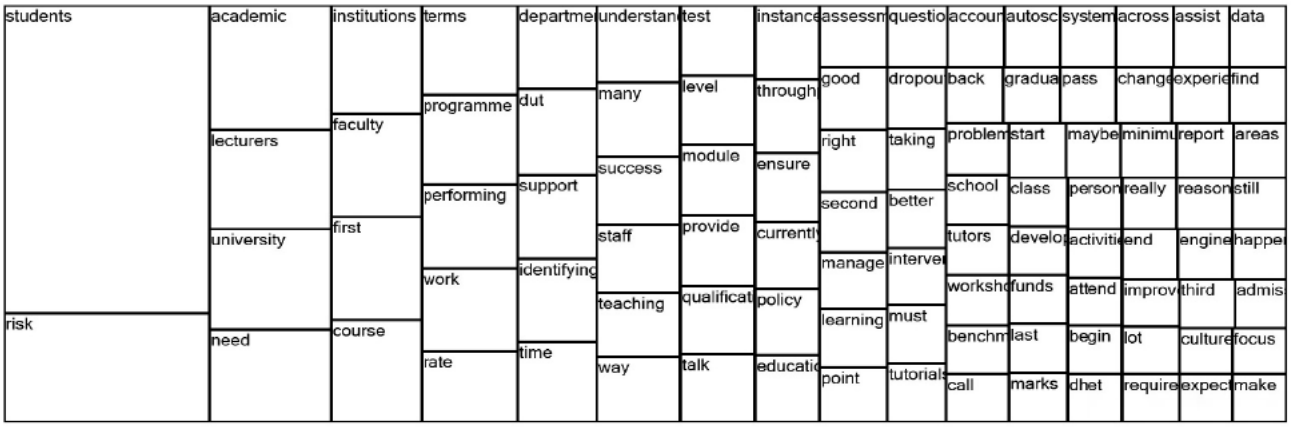


A word cloud created for narratives can be used to engage in a deeper analysis of the phenomenon being studied (Heimerl et al., 2014). The word cloud (Figure 6.1) highlights the four main words that appear more often in the qualitative analysis of the study. These words are students, risk, academic and lecturers. This would support better exhumation utilising thematic analysis for all themes of the study.

6.3.2 Tree Maps

A tree map is a tool for arranging, investigation and condensing qualitative information. These elements are depicted as nodes and connections are displayed using links from parent to child nodes (Jadeja & Shah, 2015).

Figure 6.2: Tree maps of main themes



For example, the tree map (Figure 6.2) depicts the correlation from the larger nodes (students, risk, lecturers) to smaller nodes (success, support, experience). This shows a spatial relationship between students and lecturers and risk to success and student support to lecturers and experience. This means that there is a stronger relationship between students, risk and lecturers and risk management and throughput as opposed to success, support and experience.

6.3.3 Cluster analysis

Cluster analysis is used to determine similar patterns in data. Items are combined into groups based on how closely they are associated (Romesburg, 2004).

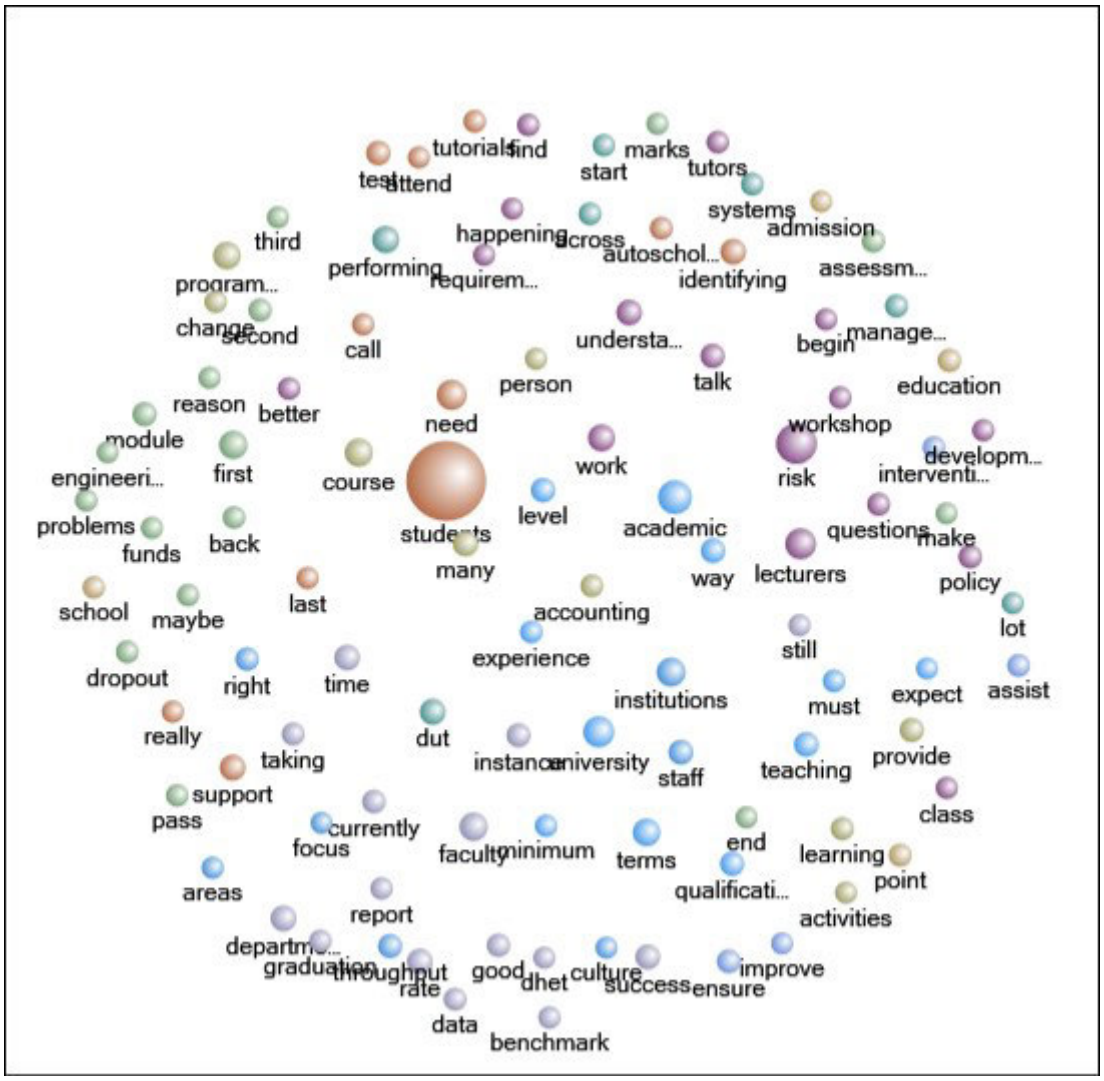


Figure 6.3: Cluster analysis of themes

Figure 6.3 is related to the cluster analysis of themes and the different relationships of the qualitative aspect of the study. Thus, each bubble of the same colour that is in close proximity to other similar colour bubbles shows the various relationships between main themes and subthemes.

6.4 THEMATIC ANALYSIS

After studying the report presented by the NVIVO statistician, the researcher found four issues that were frequently highlighted in the data. These related to the management of at risk students, the influence of lecturers on student throughput rates the effect of academic support on throughput and the Covid-19 pandemic.

These were used as themes to analyse the data. From the themes, subthemes were also identified. These are presented below.

Table 6.5: Themes drawn from descriptions

CATEGORY (MAIN THEME)	RESPONSE FROM PARTICIPANTS
THEME 1: RISK MANAGEMENT OF STUDENTS AT RISK	
Identification of at-risk students.	Lecturers, first assessment, early intervention, Autoscholar advisor system, technological support, ongoing training.
Interventions in place to manage at-risk students.	Early tracking, timely interventions, student evaluations, ECP, re-testing.
University policy and practices relating to at-risk students.	Governance, risk management, policy rules and traditional practice, commitment, responsibility based, accountability, awareness of gaps, interventions holistically, paper versus reality, staff induction.

Theme 1: Risk management of students at risk

Identification and management of students at risk of not completing their qualification within minimum time or dropping out of study has been the subject of substantial discussion, debates and proposals for intervention globally and nationally over several decades (Tinto, 1988; Letseka, 2008; Ramrathan, 2013; Makibinyane & Khumalo, 2021). While several proposals for intervention have been made and implemented the concern still remains, complexified by issues of student funding and on-going student protest actions. Within this theme, I take a risk management perspective towards students at risk with the view to exploring points within their (students) study path were risks of failing can be identified and as such interrogate these risks with the possibility of managing such risks. Three subthemes have been identified from the data. These include a sub-theme on identification of at-risk students, interventions in place to manage at-risk students and university policy and practices relating to at-risk students.

6.4.1 Identification of at-risk students

At-risk students are defined as students that are at risk of not graduating within the minimum time period allowed to complete a qualification (Styger et al., 2015; Foster & Siddle, 2020). Identification of at-risk students has been seen to be an influential aspect in the promotion of student throughput (Vasquez et al., 2015; Lavhelani, 2020). Lecturers are seen to be the first point of contact with students and are therefore more likely to identify at-risk students (Fraser & Killen, 2003; Araújo et al., 2019). The data in this study confirms this assertion. The participants do note that lecturers are the point of contact with students and that they (lecturers) have the potential to initially identify students at-risk through their engagement with their students.

"For me only the lecturer who is taking that class is the primary person to identify students who are at risk and then that lecturer, should devise, based on the support provided by the department and institution, how do we assist those students who are at risk to be successful. It can't be someone outside the class." ***DR NG***

The participants also recognise that the identification of students at-risk is usually through their assessments which is consistent with Veerasamy (2020) who asserts that early identification is through the first student assessment task.

"*Of course, we have lecturers who have to identify students who are having special needs and we do cater for those students who need extra guidance as well. We do have other students who need more coaching and support as well. The first assessment is a great tool to identify students who are battling and then we have to ensure that we give them additional support."* ***DR LJ***

"Usually, although it is done in pockets as well, most of the lecturers will, after the first assessment, identify students who scored below the pass mark, which is 50%. Once these students are identified, lecturers try to assist them so that they can perform better in future assessments. It should be the duty of the lecturer but we can't say that lecturers are always doing this. Like for instance, we have students doing well in first and second year but all of a sudden in their third year, they are not

doing well, and as a lecturer we must be able to identify those students and sit down with the student and say "Now you have been doing well in the past but what is happening now?" ***DR NG***

"So Sikhuthali is enrolled for this module together with a whole lot of other students. Early on in the year a test is given to students, then you can see how they are performing. You can see who are the students that are not performing as to the expected level so that you can then focus on those students." ***CRO***

Drawing from the data it seems that the first assessment may be a point at which students at-risk may become visible to the lecturer and as such is a crucial point in the lives of students at which early identification is possible. Risk identification, then becomes a crucial component of the lecturer's responsibility. If this risk identification is a subject of lecturer's responsibility, then appropriate support to lecturers are needed. These may include training on how lecturers could use the first and initial assessments as risk identification measures and the management thereof to track, monitor and support students identified as at-risk. While system wide identification processes are in place in many higher education institutions to determine students who are at risk of failing, the point of identification is usually at the end of semester because of the central capturing of assessment marks (Nelson et al., 2009; Hlosta et al., 2017; Latif, et al., 2021). The findings from this study suggests that even before semester examinations, lecturers can intervene by early intervention during their classroom engagements.

For lecturers to make the initial identification of at-risk students there are impeding challenges. These challenges include, amongst others, the huge class sizes that make it challenging for lecturers to effectively identify students who need assistance (Stadlman et al., 2022). To add, many lecturers have more than one module to teach per semester and as such do not have the time to monitor all students under their care. One of the recent innovations introduced to manage this early risk identification by lecturers is the introduction of the "Autoscholar" Advisor system. This system was built using artificial intelligence and is able to analyse large amounts of data related to student performance and, in turn, monitors academic

progress of students (Atif et al., 2020). The system will be able to identify students at-risk and provide automated academic advising. In addition, students can be referred to academic advisors for proactive support. The system will provide some relief for lecturers because this process can now be done automatically (Baneres et al., 2020; Latif et al., 2021; Embarak and Hawarna, 2024). The Autoscholar system, however, is dependent upon input data. Hence, class assessment marks need to be captured onto the system. In addition, lecturers need to be properly trained in order to use the system. Drawing from the data it seems that lecturers at the case study institutions know of the "Autoscholar" Advisor system as an effective tool for the early identification of at-risk students and can act as an early warning system.

"The AutoScholar Advisor system is based on Artificial Intelligence (AI) algorithms that provide analysis on large data sets and generates output in natural-language advice to staff and students to assist in managing academic progress." ***DR RG***

"The AutoScholar Advisor system securely connects to DUT's ITS database and data mines the records to auto-generate advice to staff and students." ***DR RG***

"AutoScholar" will be able to identify students at risk and it is based on current academic performance. Basically, if tests marks are in then it will identify students that are at-risk. It also provides prior year performance results. A comparison can then be done to previous results and variances can be identified. Then academic advisors are meant to actually liaise with these students to identify what the reasons for poor performance are because sometimes it may not just be purely academic." ***DR KP***

Participants also expressed the need for training to effectively use the Autoscholar advisor system as one of the risks in early detection of at-risk students.

"But as I've mentioned we still have lecturers who need to be trained. Like for instance I know at DUT we are currently introducing a new automated way which is called 'AutoScholar' which will help to give us the early warning signs of students who are at risk. Of course, we will still need to train staff on that but I think it will

make a huge difference." ***DR NG***

"That's why we also wanting to train lecturers in 'AutoScholar' to understand how it's working … look I think the main thing is it's a start. It's been rolled out and let's give it a chance because there was nothing before that on this scale." ***DR KP***

"Previously in our department we had a system where we were identifying the weak students in terms of less than 52 marks, so then we will call them and have extra lessons provided for those students through the tutors but it somehow fell off because of some other reasons and so now the institution is using the 'AutoScholar' software which again needs the involvement of the lecturers, it doesn't need the HOD." However, for the system to be effective, it has to be used by the academics otherwise it will be just like some other facilities which are there but are not being used." ***DR LJ***

Early identification of at-risk students by lecturers, in the context of their high workload, need the support of auto systems to assist in early identification, which Nnadozie et al. (2023) confirm would have a high impact on student throughput. Hence, two things emerge from this sub-section in relation to lecturers being the first point of call for identifying students at risk. The first is the need for technological support to manage the large amount of data (assessment marks) of all students in their module and the second is to be able to use the technology effectively, necessitating on-going training and support to lecturers. The capture of accurate data on the automated system is another factor that needs attention because the assessment marks need to be input into the technology (Autoscholar Advisor system) for it to generate the risk profiles of students and the management thereof.

6.4.2 Interventions in place to manage at-risk students

Early tracking and timely support for at-risk students seems to be a valuable strategy in managing the risk of low throughput (Eiselen & Geyser, 2003; Styger et al., 2015; Lourens & Bleazard, 2016; Donnell et al., 2018). The data in this study confirms this assertion. The participants note that communication between lecturers and

academic development practitioners could result in timely interventions that result is increased throughput rates (Abrams & Jernigan, 1984; Russo-Gleicher, 2013).

"We need to be able to track those students who are at risk and identify them as early as possible and provide support through the department via Academic Development Practitioners." ***DR NG***

"*So, the intervention mustn't start at the end.*" ***DR KP***

"*Once students are identified as at-risk, they should be referred to the academic development practioners who can identify and assist with the support the student needs".* ***DR LJ***

"Students who are struggling are referred by lecturers to academic development practitioners who try to determine what the problem is and try to help the student" ***DR RG***

In addition, re-testing of students has been seen to be an effective tool in aiding academic progress (Hassan, 2023).

"Students can be given a so called 'retest' or 'make-up test' if I can put it that way. This is to ensure that those who are on the margin or are at risk are able to be given another opportunity." ***DR NG***

"*In some modules students are given many opportunities to improve on their existing marks. This can be re-testing".* ***CRO***

Student evaluations are common practice, at higher education institutions, in identifying concerns relating to a lecturer (Johnson, 2000). Participants also recognise that heads of departments may play a facilitating role in the management of at-risk students by analysing lecturer evaluations to identify students concerns and implementing timely interventions (De Neve, 1991; Hobson & Talbot, 2001; Sherwani & Singh, 2015).

“Student evaluations (LEQ’s) can assist the lecturer to see the areas in which the students are not happy and take corrective action.” ***DR RG***

“*The purpose of student evaluations is to give lecturers feedback on the effectiveness of their teaching and to highlight areas of concern. Such criticism should not be taken negatively”.* ***DR LG***

“*The thing with student evaluations is that they must be done early in the semester to work.”* ***DR NG***

As a measure to assist students, who despite meeting the minimum entrance criteria are underprepared, the government introduced the Extended Curricular Program (ECP). This programme is targeted at previously disadvantaged students. The curriculum for this programme adds an additional year of study. A traditional 3-year diploma will now take the student 4 years to complete. The additional year contains additional modules that provide a sound academic foundation so that students can complete their qualifications successfully (Slabbert & Friedrich-Nel, 2015; Johnson, 2017; Garraway & Bozalek, 2019). The ECP programme has been found to been effective in increasing student success and throughput rates (Slabbert & Friedrich-Nel, 2015; Johnson, 2017; Mgutshini, 2022). Drawing from the data, it seems that participants concur with this view.

“ECP students can be classified as at-risk students because of their lack of readiness for tertiary education. Therefore, they need additional support.” ***DR OLI***

“In fact, the results of ECP students are better than the students who are in the mainstream program. One additional year is making a big difference.” ***DR NG***

“The introduction of the ECP has been a good idea and one can see the results.” ***DR LJ***

Early tracking and timely intervention for at-risk students may assist in ensuring student success and throughput. One of these interventions could include re-testing

students who have not performed well in assessments. The ECP programme is yet another intervention that has assisted previously disadvantaged students to succeed. From a lecturer perspective, student evaluations may assist in identifying any areas of concern raised by students and enable lecturers to address these matters. The identification of risks and the implementation of suitable interventions to manage risks are crucial elements of the risk management process (Ullah et al., 2021). Hence, two things emerge from this sub-section, the need for early tracking and timely interventions for at-risk students and the timely distribution of lecturer evaluations to identify and resolve concern raised by students.

6.4.3 University policy and practices relating to at-risk students

In order for an organisation to achieve its vision and mission, effective governance is of paramount importance (Trakman, 2008; Blackman & Kennedy, 2009; Irtyshcheva et al., 2022). Governance is concerned with the design of suitable policies, structures and processes, by people in authority, to protect the stakeholders of the organisation and the achievement of the entities' objectives (Keping, 2018; Tibiletti et al., 2021; Bacq & Aguilera, 2022). Risk management is a key component in ensuring effective governance (Sum & Saad, 2017; Buja et al., 2022; Kalia & Gill, 2023). Since students are one of the main stakeholders in a higher education institution, suitable policies and structures need to be in place to ensure that students graduate within minimum time (Leisyte & Westerheijden, 2014; Mosen-Lowe et al, 2009; Brown, 2016; Marshall, 2018). In this regard, many institutions have a formalised policy relating to the identification and management of students at risk of failing. Since managing risk requires a holistic approach, it is vital that this policy is communicated to all levels of management and staff so that they understand what their role is in achieving this objective (Abba et al., 2022). Drawing from the data, it seems as though some participants consider the rules contained in the general handbook as a policy. These rules, for example, the G-17 rule, contained in the general handbook relates to students who do not meet the progression requirements for their programme. The data suggests that staff view this rule as the risk management policy.

"*So as far as I know, I would think the ones like the institutional ones would be pretty*

much like your G-17 rule which happens too late. Sorry, you've failed 3 times or whatever that's it." ***DR KP***

"*I know that currently according to the General Handbook students can only be identified after 2-3 years, whether they will be able to complete the course within the maximum time period which is 5 years and sometimes it's too late at that stage but if we do have a mechanism or early interventions to ensure that you are able to identify those students who need assistance instead of waiting until the student is in his or her third, fourth or even fifth year in some instances to say now we apply to G17 which is too late at that stage."* ***DR NG***

To add, some seem to view traditional practice as policy. However, policy precedes practice and 'practice' relates to the practical application of the policy (Huber & Helm, 2020).

"*Whether it's policy I'm not sure but the university is active in identifying at-risk students. Whether that is on paper as a policy I'm not sure but it's traditional practice, in other words, it's something that has been going on and still going on and because its language spoken at the higher education sector level it's unlikely that DUT would not get into it. Perhaps we can improve and do it better but it is happening. It's traditional practice and it's set to continue."* ***CRO***

"I am not sure if there is a policy but we have been doing this for some time." ***DR NG***

Drawing from the data, it seems that academics may not have been exposed to all university policies. In addition, academics may be confused in understanding the difference between rules, policies and practices. Rules are specific in nature and stipulate behaviour whilst policies are general guiding statements that assist in the decision-making process (Anthony, 1991). Staff induction in this area may be beneficial (Vernon, 2023).

Some participants expressed the need for a policy in order to hold staff accountable as well as to clearly understand the role that stakeholders play in supporting these students.

An 'at risk' policy will hold all stakeholders accountable." ***DR RG***

"No, we need a university policy on supporting 'students at risk' as they are our customers and we have an obligation to support them since we accepted them to the programme." ***DR RG***

"*Yes, now this is where, I don't know if you've heard of 'AutoScholar' which was something that was introduced through the Siyaphumelela Project but training has been going on in 'AutoScholar'. It hasn't been sort of I would say rolled out in a formal policy way but it's happening – it's going to be happening, I think it started sort of in pockets but it's going to become a lot more institutionalised, so through 'AutoScholar' it will be able to identify students at risk and it is based on academic performance, current academic performance, so if tests marks are in then it will identify. If there aren't test marks then it might look at if it's for example second year students, how they performed last year or the previous year. So 'AutoScholar' is going to be used now."* ***DR KP***

Drawing from the data, it seems that participants view policy as a form of accountability. This is confirmed by Falabella (2020) who view policy as one form of accountability. To add, Abhayawansa et al. (2021) view accountability as a form of governance. However, some participants seem to feel that teaching should be responsibility based whether a policy exists or not and lecturers should be the ones to identify and track students that are at risk (Kaur, 2020). In addition, policy and practice need to be balanced. There is no use having a policy if relevant stakeholders do not comply with it (Okai-Ugbaje et al., 2020).

"*University is a place of responsibility where if you have been entrusted with some form of responsibility you have to do it very well."* ***DR OLI***

"For academics we need to do our job very well and take the interest of our students. This is paramount to us because we hold their destiny in our hand and we are supposed to track, for example, I supervise for grad students, I track their progress, so individual academics should track the progress of their students without even policy because I don't believe that we have to have policies for almost everything in the university otherwise we will now be focusing more on them. I think it's not everything, for example, there's no policy on how Rajesh should teach so if now say we should give policy on how you teach then we are already moving away from university. University is a place of responsibility where if you have been entrusted with some form of responsibility you have to do it very well." ***DR OLI***

Early identification and tracking of at-risk students can be achieved through an at-risk policy which contains the systems and processes in place to effectively manage students at risk, thereby resulting in increased throughput. In addition, staff awareness and understanding of the at-risk policy and their role in the at-risk process will enable the effective implementation of the policy and thereby promote student throughput.

Hence, two themes emerge in relation to the at-risk policy and how it can be used to manage low student throughput. The first is the need for an at-risk policy and the second is the induction of staff on the policy so they understand their role in the at-risk process.

Table 6.6: Themes drawn from descriptions

CATEGORY (MAIN THEME)	RESPONSE FROM PARTICIPANTS
THEME 2: LECTURER COMPETENCIES IN RELATION TO RISK MANAGEMENT	
Lecturer competencies in relation to risk management.	Adequately qualified and trained, qualification relevant to teaching discipline, experience, skills in imparting knowledge, lecturer teaching methods, industry experience, contract lecturers, communication skills, continuous academic development.

6.5 LECTURER COMPETENCIES IN RELATION TO RISK MANAGEMENT

Lecturers play a crucial role in ensuring student success and there is an increasing demand for lecturers to be held accountable for student throughput and graduation rates (Poalses & Bezuidenhout, 2018; Bothma & Rossouw, 2019; Eloff et al., 2021). The core function of a lecturer is teaching and learning. In order to provide quality teaching, it is important for an individual to possess the necessary competencies. Simply put, competency includes the knowledge and skills required to perform a task effectively (Prasetio et al., 2017). Within this theme, I take a risk management perspective towards lecturer's competencies with the aim of identifying and interrogating these risks with a possibility of managing such risks. One theme relating to lecturers has been identified from the data.

6.5.1 Lecturer competencies

Competencies can be described as the knowledge, skills, experience and other characteristics related to job performance (HHDNP, 2020; Wong, 2020). Lecturer competencies has been seen to play a pivotal role in ensuring student completion (Lewin & Mawoyo, 2014; Wilson-Strydom, 2015; Latip et al., 2020). The data in this study confirms this assertion. The participants do note that the knowledge, skills and experience of lecturers could play a vital role in the throughput rates of students. Qualifications also need to be relevant to the teaching discipline. This is confirmed by Baverstock and Wenger (2018) who assert that an academic possessing a qualification in the subject they are teaching is better equipped to teach that subject.

"So, if you employ somebody to teach an accounting student a degree, that person must also firstly have a degree in accounting and of course the person should also have a higher qualification and the more qualifications you have the more experience you have in terms of number of years. So, you will expect somebody who is having 10 years of experience will even be more mature to teach than somebody who has 3 months, that's why sometimes when we advertise we say, "look we need somebody at lecturer level who has 3 years' university experience."
DR OLI

"So in terms of teaching experience, again normally before you can teach in some

*parts of the world their policy will demand that you have qualification in education because of the educational principles that you have to understand before you can teach, so it depends, but for me I think qualification has to do with discipline that you are lecturing and then the qualification that you have to teach. So that's what I mean by qualification**." DR OLI***

The participants also recognise the need for lecturers to have industry experience in their subject areas, which is consistent with Mian et al., (2020) who assert that lecturers need to have relevant industry experience to effectively train students for the world of work. Academics can draw on this practical experience during their teaching which may assist students in gaining a better understanding of concepts. This in turn may enable increased student throughput.

*"Yes, I think one way of looking at it in addition to what you are saying and this is a conversation we had – I can't remember at what platform within the institution – I think it was the risk workshop for teaching and learning and I was saying at Nelson Mandela University there's a level in the hierarchy, there's a level which you will not be able to get to as an academics if you don't have industry experience and that's the one way of encouraging those industry university partnerships as part of your research and innovation but as I said it also gives you the practical experience. It's also another way of ensuring that when there is an opportunity we encourage those who are in industry to come on board to academia. You know DUT does not have anything that says "You must have so many years' industry experience before you can get to this level." **CRO***

*"They might not be practical enough, that's one of the things that I've noticed that as lecturers we are not practical enough. We tend to do maybe what was done to us while we were studying and we copy that method not knowing that things have changed completely now and besides that Rajesh, we are sitting with students who are not the same." **DR LJ***

The participants also note the importance of lecturers having the requisite communication skills to impart knowledge to students. Jakhanwal (2021) defines

communication skills as the ability to impart information in an effective manner. HHDNP (2020) asserts that lecturer communication skills are positively and significantly related to student satisfaction. Hence, this may positively influence student throughput.

"It's about the communication skills because remember technical insight, depth of knowledge does not necessarily talk to one's communication skills and I think that's part of the reason why employability of our students is defined broader than the technical skills, you know. Are you able to communicate? Are you able to work in a team? So those skills are skills which our academics also need to have but before you start talking that language, the license to practice which says you have an appetite for research, it's an academic institution, you have an appetite for research – you are better positioned to see the market trends. That's how I would look at it. You could have your Sikhuthali with his Chartered Accountancy, with his PhD you know, post-doctoral experience but put him in class – zilch. He can't get the information across. That's possible I mean it's a human being we're talking about." ***CRO***

"Lecturers need to have good communication skills." ***DR RG***

Participants also expressed the need for lecturers to be accommodating in their teaching methods. There can be a variety of learners in a classroom hence there should be a variety of teaching methods to cater for the different types of learners (Malikovna, 2022; Wahyudin & Wahyudin, 2022). Furthermore, as new topics are added to the curriculum, different teaching methods should also be considered (Masud et al., 2022). In a study conducted by Granbom and Granbom (2019) it was discovered that the biggest contributor to increased student performance was a variation in teaching methods.

"And also, within lecturers themselves – you know we get used to the style, our own pedagogy that we use and we tend to know the syllabus and then we take things easy forgetting that there are students also who don't understand what we are talking about and because we understand the syllabus and then we just run with the

syllabus it looks like everything. So, the intervention on the lecturers' part is also important, that is why some of the students they just left behind." ***DR LJ***

"We are always told that there are students who are visual and there are those students who wants to hear, so in those differences do we accommodate them or we just run with the method that I know that is suitable to me and then at the end of the day you give an assessment and even the assessment you give, you don't accommodate for the differences in the students, that those are the ones that need more explanation of the question and these others they need a higher level of questions." ***DR LJ***

"We are not accommodating enough, that one I know. We are not accommodating enough in our teaching methods." ***DR LJ***

To add, some participants expressed concern relating to the employment of contract/temporary lecturers. Contract lecturers are individuals who could be appointed for a term, semester or year and who are not guaranteed of returning. These appointments usually arise when a vacancy arises and a permanent staff has not yet been appointed. In addition, it could be due to cost savings since a contract lecturer is not paid any benefits such as pension, medical aid and housing allowance. However, such practices may result in the appointment of lecturers who lack the necessary knowledge, skills and experience to deliver quality teaching. This is confirmed by Wambui et al. (2016) who asserts that the teaching experience of contract lecturers has a linear relationship with the quality of teaching delivered. The data in this study confirms this assertion. The participants note that the appointment of contract lecturers may result in poor teaching, ultimately resulting in low throughput (Ran & Xu, 2019).

"And also, I'm trying to think of the reason whether it's a financial thing in that if we just want somebody standing in front of the class on a contract where we're not having to pay them the sort of permanent position – it's not the benefits, it's not the medical aid. We're just paying them per hours or whatever the contract is. It's like a financial decision but then it's experience at the expense of throughput ultimately."

DR KP

"*We place so much of emphasis on quality, I think employing contract lecturers affects quality negatively"* ***DR RG***

Enormous changes have occurred in the higher education landscape in the past few years, among them being the introduction of new teaching and research methods. These changes warrant the need for continuous academic development by lecturers in order to conduct effective teaching and learning (Ferman, 2002; Mujiburrahman et al., 2022). This is confirmed by Permana et al. (2021) who assert that qualifications of lecturers have a direct role in providing quality education. Drawing from the data it seems that participants view staff development, especially, the attainment of a PHD as crucial in improving the quality of education as well as complying with the National Development Plan (National Planning Commission, 2013).

"But the second risk, the National Development Plan aspires to have I think 75% of academics holding a PhD degree by 2030. The DUT in relation to sister institutions is trailing way behind – I'm not saying they are the very last but the DUT is trailing way behind and my understanding is that some of our academics don't even see the need to have a PhD Degree yet in my world and I'm not an academic in my world, a PhD is kind of license to practice because a PhD talks to your appetite for research which means your chances of being up-to-date with market trends and that equips you when it comes to imparting knowledge to your students. So that's the second part. Our academics are reluctant to embrace the need to pursue PhD degrees like Raj is doing now". ***CRO***

"As I've already mentioned, we are already encouraging staff via UCDG to ensure that most of our lecturers get funding to pursue their higher postgraduate qualification up to PhD level". ***CRO***

"Yeah for example before I became the Dean, I remember when I joined DUT in 2010. I only met two persons with their PhD in the faculty and when I became the

Dean we have about 8 PhD holders. Today we have more than 30 PhD holders so you see we have solved many of these problems. So, I can boast that the Faculty of Accounting and Informatics carry minimal risk, we don't have much risk because many of our staff have higher qualifications. I'm sure 10 years ago you never think of doing your PhD so we have been able to address some of those associated risks in terms of qualified staff and subsequently our employment is also focused on employing the right kind of academics so you will never see somebody with a qualification in Physics to teach Accounting, that can never happen." ***DR OLI***

The knowledge, skills and experiences of lecturers contribute immensely to quality teaching and learning, thereby reducing the risk of low student throughput. This is confirmed by Latip et al. (2020). Hence, the main theme that arises in this sub-section is the employment of lecturers with suitable competencies which will thereby reduce the risk of low throughput rates.

Table 6.7: Themes drawn from descriptions

CATEGORY (MAIN THEME)	RESPONSE FROM PARTICIPANTS
THEME 3: Academic support services as a tool to aid student throughput	
Tutorials as a form of academic support.	Large class sizes, provision of quality learning, use of tutorials, problem solving and critical thinking, correlation between tutorials and marks, metrics to measure effectiveness of tutorials, attendance registers, peer tutoring.
Academic advisors	Academic support, counselling, mentoring, advising, academic advising and throughput, sufficiency of advisors, quality of academic advising.

6.6 ACADEMIC SUPPORT SERVICES AS A TOOL TO AID STUDENT THROUGHPUT

A consequence of the massification of higher education is a more diverse student population. The diversity in student population has resulted in an increased need for academic support (MacIntosh et al., 2021). Academic support services include assisting students with study skills, tutorials, academic advising, time management,

peer to peer instructions and mentoring amongst others (Abrams & Jernigan, 1984; Xiong & Lee, 2011; Xerri et al., 2018; Sarid et al., 2020). Academic support has been found to be effective in increasing student throughput rates (Collins, 2012; Chen, 2017; Hoyt, 2023). In this theme, I adopt a risk management outlook towards the use of academic support in universities with a view to exploring potential risks, with the possibility of managing such risks. Two sub-themes have been identified from the data. These include a sub-theme on tutorials and on academic advisors.

6.6.1 Tutorials as a form of academic support

One of the consequences of massification is large classes (Hornsby & Osman, 2014; Akalu, 2016; Nyagope, 2024). Large class sizes do not provide the opportunity for deep learning and understanding (Maloney, 2020). In order for quality learning to be achieved, lectures have to be supplemented by other forms of teachings. One way of achieving this is through the use of tutorials (Adebola, 2020; Rissanen & Costello, 2023).Tutorials can be defined as "personalised and student-centred small group sessions that provide a safe space for deeper engagement with the subject area in order to develop important skills and abilities that are targeted by the course" (Balwant & Doon, 2021, p.166). Tutorials provide the opportunity for personal attention, deeper engagement and the development of skills such as problem solving and critical thinking (Prosser & Trigwell, 1999; Balwant & Doon, 2021).

A more recent study by the University of Northampton used three and half years of student assessment data from its tutorial database to understand the impact that tutorials had on student pass rates. This included over 16000 students and 175000 assessments. It discovered that the pass rates for students who attended tutorials were much higher and there was a positive correlation between the number of tutorials attended and the marks achieved. Attendance at tutorials has been seen to have a positive effect on student pass and throughput rates (Matsoso & Iwu, 2017; Serra et al., 2023). However, the effectiveness of tutorials can be lost due to large tutorial classes (Essien, 2018, Ikpesu et al., 2021). The data in this study confirms this assertion. From a risk analysis perspective, large tutorial groups do compromise

the intent of tutorials and may impact negatively on the pass rate of the module. The participants do note that large tutorial classes take away the value of tutorship.

"Yeah wow okay. Yeah you right. The last time I was working with tutorials, mine was a bit different so we were actually able to split our tutorials into smaller groups of about 30. You see because Economics too like your modules it's very big classes, but I think we were able to get it into 30. You know the other thing though is and again I mean I'm talking from three and a half years ago, maybe things have changed but I remember that time when you got the funding for tutorials and you had tuts being run, the extent of the lecturer involvement – monitoring, guiding the tutor – there was no consistency there because I know for a fact there were lecturers who basically saw that one period as this is my period off because the tutor is having a tut. That's it." ***DR KPI***

"Yeah if you have 600 students, how do you conduct effective tutorials it because like in your case you are teaching them a theory subject and tutorials are used to demonstrate how this theory is applied in practical situations, like in case studies. It won't be effective at all because you will find that only those students who are sitting in front of you will be able to understand what's going on. So, then it means it's not effective." ***DR RG***

"No, no. That should be revisited. It would not be optimal. That should be revisited. I think it would also talk to or it would be driven by how many you know – that staff student ratio – if it is bad and we not having sufficient high performing students who would lead those tutorials then it could be the reason why we have that but it's definitely not an ideal arrangement." ***CRO***

The participants also note that the efficacy of tutorials need to be measured in a structured way using suitable metrics instead of measuring effectiveness on attendance rates only (Trigwell & Prosser, 2020). In addition to the large tutorial group size, the quality of what happens within tutorials has been raised as a concern. From a risk analysis perspective effectiveness beyond attendance registers is needed.

"I don't think it's currently being measured in any consistent or systematic way across the university. I suppose the closest in terms of tutorials would be attendance registers because certainly, I mean the tutors have to submit registers when they claim but then is there any link between tutorial attendance and subsequent performance. I don't think that's being evaluated and so I think this speaks to a broader question as to are we collecting the correct metrics to actually measure the effectiveness of academic support? Just to say "Oh I had 500 students attending tutorials," is that a measure of effectiveness of academic support or is it to say "That of the 500 students, 100 attended 80% of the time, the other 400 came only for the last 20% of the tutorials before the test was being written? The Siya Project, again this is something that we really wanting to focus on and develop a proper way of monitoring and evaluating going forward." ***DR KP***

"*How are we measuring the effectiveness of tutorials, is there certain metrics that is being used".* ***DR RG***

The participants also recognise that peer tutoring may be a more effective method of tutoring compared to tutorials conducted by lecturers. Peer tutoring is where tutorials are conducted by senior students who have excelled in their studies. Some of the advantages to this include enhanced student engagement, removal of language barriers and an increase in motivation. This in turn leads to increased pass rates and throughput rates (Arco-Tirado et al., 2020; Kim et al., 2021; Shenoy & Peterson, 2020; Thurston et al., 2021).

"We also have tutorship programmes – those better performing students who we offer an opportunity to provide, what do you call it? Some lessons to their colleagues……. peer tutoring. A student will talk better with another student – they speak the same language compared to an academic, so it helps the receiver to understand the message better whilst it motivates the one who is the tutor." ***CRO***

"Residence based tutorials is one form of peer tutoring. Here, the students and the tutor live in the same building. They don't feel afraid to ask questions to the tutor." ***DR LJ***

"Students are more open to peers compared to the lecturers. So that is one of the things that we have seen that if we have peer tutoring then the students are able to open up." ***DR LJ***

"What I like about having peer tutors and tutorials is the first language that tutors speak. Most of our students are black and having a tutor that speaks Isizulu is very effective. Students understand better. But we were very careful in our selection, we use tutors that are high achievers. So, every week the tutor comes in, they are given questions in advance. We then tell the tutors "You go and answer the questions yourself and you come back and you show me your answers and we discuss it." So, we didn't even give them the answers. The tutor had to actually do the work and the idea being "Well you did Economics the year before so you should be able to do it," that's how we ran ours so we had very close monitoring and evaluation." ***DR KP***

From the above data, it seems that who tutors the students do matter. Senior students who have excelled in their modules are suggested by the participants to be most appropriate as tutors. This is confirmed by Arco-Tirado et al. (2020). Thus, the main issues that arise from this sub-theme is the use of suitable metrics to measure the efficacy of tutorials and the use of peer tutoring by students that have excelled in their studies. These interventions could contribute to the mitigation of low throughput rates.

6.6.2 Academic advisors

One of the key functions of an academic advisor is to provide academic support to students. This can be in the form of counselling, mentoring and advising amongst others (Hays & Clements, 2011; Winchester-Seeto et al., 2016; Wenham et al., 2020). Academic advising has been seen to have a positive effect on student throughput rates (Tippets et al., 2022; Ideas42, 2016; Tinto, 2012; 2017). This holds true especially for low income, disadvantaged first generation students (Bates, 2011; Winchester-Seeto et al., 2016; Rendon, 2021). To add, at-risk students who make use of academic advisors have a greater chance of success (Mu & Fosnacht, 2019; Centanni, 2023).

“Presently, in our faculty, the Academic Advisors are using AutoScholar to identify ‘at risk students’. The Academic Advisors are consulting with these students to find out what are the challenges that they are facing and advising them accordingly.” ***DR RG***

“Yes, advisors are assigned to do this task, but it is not always happening. For us what we need to do is just upload the results on the system and then she will check those students who are below 52 and then identify them and take them to extra lessons and then then she must inform us that there are students for let’s say Auditing 2, who needs your intervention. You can then prepare extra work and then give it to the tutor.” ***DR LJ***

“Academic advisors play a key role. They will engage with students and determine the support the students need. They will then advise students accordingly.” ***DR OLI***

“*Academic advisors have an important function. Students need to be aware of this service, since it can play a vital role in ensuring that a student passes”.* ***DR KP***

Thus, the use of academic advisors in the identification and management of at-risk students may contribute positively to student retention (Centanni, 2023).

The participants also note that the effectiveness of academic advising is affected by the sufficiency of advisors.

“What worries me big time is that it’s like literally one academic advisor per 2 faculties. This will severely constrain the effectiveness of this intervention. Yeah, the Autoscholar system will identify students at-risk of failing, but once this is done what’s the next step? ***DR KP***

“There are so few academic advisors that not all students are being attended to.” **DR LJ**

"For academic advising to been successful, the university needs to provide an adequate number of advisors. Funding needs to be secured to do justice." ***DR NG***

Academic advising plays a crucial role in the throughput of at-risk students (Mu & Fosnacht, 2019; Centanni, 2023). However, the quality of academic advising is affected by the number of advisors available (Hart-Baldridge, 2020). Thus, two issues arise from this sub-theme, the use of academic advisors in tracking and supporting at-risk students and the sufficiency of advisors to provide quality support for all students. Early identification of such risks can result in timely interventions thus contributing to student retention and throughput.

Table 6.8: Themes drawn from descriptions

CATEGORY (MAIN THEME)	RESPONSE FROM PARTICIPANTS
THEME 4: Teaching and learning during Covid-19	

6.7 TEACHING AND LEARNING DURING COVID 19

In December 2019, the world experienced an unprecedented health pandemic, Covid-19 (Shereen et al., 2020). The impact of Covid-19 was far reaching, affecting every sector of business. Higher education was no exception (d'Orville, 2020). With heavy lockdowns being imposed all over the world, it soon became evident that it could not be "business as usual" (Pokhrel & Chhetri, 2021). Traditional universities that only offered face-to-face lectures had to move to 'emergency mode' in order to save the year (Dell, 2020; Macupe, 2020). The pandemic posed a huge risk on throughput and graduation rates. Managing these risks was vital (Karakose, 2021; Wang et al., 2020; Qurotul Aini et al., 2020).

The transition from face-to-face learning to online learning, in a short period, was stressful for learners, who struggled to cope academically (Annsilla, 2021; Lurvnik, 2020; Marinoni et al., 2020; Psychosocial Centre, 2020). A consequence of this was an increase in student de-registration (Angu, 2019; Dube, 2020; Mhlanga & Moloi, 2020; Angu, 2022). The data in this study confirms this assertion.

“I heard via the grapevine that some students are actually deregistering from second semester – they did so in May, as soon as they could.” ***DR KP***

“Many students are stressed and are struggling to cope with the new way of learning. And many are deregistering”. ***DR RG***

The sudden shift to online learning was challenging for most students. The use of tools such as Microsoft Teams, Google Classroom, Blackboard and Moodle in online teaching was new and challenging to most students (Jandrić, 2020; Petrie C, 2020; Subedi et al., 2020; Hermanto & Srimulyani, 2021; Simamora, 2020; Purwanto, 2020). This was confirmed by some participants who felt that the shift to online learning was challenging for students and could impact throughput rates.

“The shift to multimodal learning is presenting huge challenges to students. The concern is that this may impact throughput rates negatively”. ***DR KP***

“Students are struggling to adapt to using Blackboard, Moodle and other online programs. This is new to them. I am worried about how students are going to get through.” ***DR LJ***

“Our university has always only conducted face to face lectures and the use of digital platforms is foreign to students”. ***DR NG***

Universities hastily rolled out laptops and data to underprivileged students (Department of Higher Education and Training, 2020). However, poor internet connection especially in rural areas posed a huge problem (Oreku, 2021; Lederer et al., 2021; Dube, 2020). The data in this study confirms this assertion. The participants note that the lack of devices and poor data connection may have an impact on student throughput rates.

“Students don’t even have devices and I honestly don’t know what DUT has done from that point of view – whether there have been procurements to get laptops and how will the laptops get here? This could really affect student’s results.” ***DR KP***

“Students don’t have data. Also, the internet connection, especially in rural areas are very poor”. I am worried about how students are going to get through.” ***DR LJ***

“Well I think from the student point of view it’s the data, yeah it’s the data because the big thing was that we shifting to online – you need data. So, I think this is a massive effort on the part of the university to do that.” ***DR NG***

To add, some participants felt that load-shedding is going to also negatively impact online teaching. This is confirmed by Hlatshwayo (2022) and others who assert that load-shedding by Eskom added to students’ woes (Dyomfana B, 2021; Omodan & Ige, 2021).

“In South Arica, we have another challenge, the long periods of load shedding are definitely going to affect students.” ***DR NG***

“This load shedding is causing a huge problem for online teaching. Blackboard and Moodle all need internet.” ***DR KP***

The participants also felt that the training and support in the use of digital platforms was slow, with both learners and teachers learning through trial and error. This is consistent with findings by researchers (Eberle & Hobrecht, 2021; Pokhrel & Chhetri, 2021).

“We are trying to organise some training for staff and students on how to use online tools for teaching and learning. However, the pace is not fast enough. In the meantime, they have to learn through trial and error.” ***DR RG***

“Clearly, staff have to be upskilled to teach online because they have no experience to teach online. Students also have to be trained. The university is trying to rectify the situation.” ***DR KP***

The Covid-19 pandemic revealed many cracks in the higher education space. The move to online teaching posed many challenges, some of which were the lack of

devices, data, and training. Events such as the pandemic are likely to repeat itself in the future. Thus, it is imperative that higher education institutions plan for this. Such planning could include keeping up with technological advancements, ongoing training for staff and students in the use of digital technology and the provision of adequate resources and infrastructure.

The adoption of a risk management approach may ensure the early identification of potential threats on a continuous basis, the ranking of these threats and the implementation of suitable interventions to manage these threats (Izumi et al., 2021; Nandy et al., 2021). Failure to do so could have a devastating impact on student throughput rates (Soudien et al., 2022; Maringe, & Chiramba, 2022; Branson & Whitelaw, 2024). Thus, the main issue that arises from this theme is the importance of continuous advancement and training in digital technology for students and staff as well as the availability of adequate resources and infrastructure in preparation for future uncertain events.

6.8 CONCLUSION

This chapter analysed the data in terms of the identified themes and subthemes. The next chapter will follow with an engagement of the key findings of the study. Four themes were identified in the analysis. Some of the key findings that have emerged in relation to at-risk students include the need for the early identification and tracking of at-risk students. In addition, lecturer competencies were seen to play a pivotal role in the throughput of students. Competencies highlighted include the need for lecturers to have relevant industry experience, effective communication skills as well as the utilisation of a variety of teaching methods. Large tutorial groups were seen to compromise the efficacy of tutorials and the use of peer tutoring may be a more impactful alternative. Lastly, the negative impact of Covid-19 on teaching and learning was emphasised. The main issue that arose from this theme is the importance of continuous training in digital technology for students and staff, as well as the availability of adequate resources and infrastructure in preparation for future uncertain events.

The findings accentuate the need for the implementation of effective risk management tools in three key areas, namely, lecturer competencies, academic support services and at-risk students. Another key finding that emerged from the Covid-19 pandemic was the need for risk scenario planning in order to prepare for future uncertain events (Hassani & Hassani, 2016; Fraser & Simkins, 2021).

CHAPTER SEVEN - DISCUSSION AND RECOMMENDATIONS

7.1 INTRODUCTION

This study adopted a mixed methods approach using multiple methods of collecting data, namely, semi-structured interviews and student surveys which contributed towards the quality, truthfulness and credibility of data. Chapter Five presented and discussed the findings from the quantitative data collection. The previous chapter presented and analysed the data using thematic analysis. In this chapter, the focus is on elevating the analysis to a theoretical engagement using the key constructs of the theory. The study focused on the use of risk management to aid student throughput.

The versatility of the concept of risk management has opened up a new dimension in looking at higher education (Raanan, 2008; Sum & Saad, 2017). Risk management involves the identification and managing of risks to ensure that an institution achieves its strategic objectives (Hopkin, 2018; Crous, 2017). In a higher education institution, one of the key objectives is to ensure that students complete their studies within regulation time. However, currently this is not the situation (Statistics South Africa, 2019, 2021). Low throughput rates pose many risks for a university, some of which include strategic risks, financial risks and reputational risks, as discussed previously in the literature review chapter. While numerous studies have been conducted on student throughput, this study takes a different position, it looks at the same phenomenon through the lens of risk management. More specifically, the current study focused on risk management within the context of student throughput and explored this phenomenon from both an institutional perspective as well as a student perspective.

Recognition of students at risk is an on-going process from inception to completion of study and all stakeholders within the university should be included in the process of on-going recognition. The King Code recommends a stakeholder inclusive model for recognition of risk. This deals with stakeholder inclusivity in all decision making. In a company, shareholders (owners) are just one of the stakeholders. The inclusivity principle states that when decisions are made, the interest of all

stakeholders need to be considered and not just shareholders. Similarly, when it comes to risk management all role players' views should be considered and not just management. This means that lecturers, discipline heads, university leaders and students themselves should form the inclusive model of recognition. While this process of recognition of risk seems logical, the actual recognition of risk is limited to the lecturer and students in the first instance. Students would know and recognise that they are not coping with the demands of their study but may choose to ignore this realisation for various reasons including fear. Lecturers would then be the second level of recognition as they interact with students in lectures as well as assess their assessment tasks. Lecturers may either ignore the risk warnings of low levels of student engagement or assessment marks or intervene to rectify which is in line with King Code's core of inclusive models for recognition of risks. If they ignore early signs of risk, the next level of recognition would be at the Faculty level through the exam board processes where student's progressions are discussed and progression decisions are made. At this level of recognition, it might be a little late to intervene as the student may have failed progression requirements and may engender different responses including students either withdrawing from studying, changing study programmes or repeating failed modules.

Lecturer accountability for teaching quality is vital for the success of students. The King Code asserts that stakeholders must be held accountable for their role in an organisation. Lecturers in a university need to accept responsibility for the performance of their students as they are the first point of contact for learning (Bothma & Rossouw, 2019; Eloff et al., 2021). Thus, the competencies of lecturers plays a crucial role in the success of students (Khalid et al., 2020; Latip et al., 2020). Competence is not only about knowledge but includes knowledge transfer, problem solving, communication and technological skills. In addition, industry experience is needed to relate theoretical knowledge to workplace situations (Bailey & Phillips, 2016; Prasetio et al., 2017; Latip et al., 2020; Eloff et al., 2023). Besides lecturers there are other sources of teaching related accountability which is in accordance with the King Code's concepts of accountability. The first step of accountability rests with management who need to ensure that suitable policies and criteria are in place to ensure that the most suitable candidates are employed as lecturers. The human

resources department then need to ensure that employment contracts clearly stipulate the teaching responsibilties of the lecturer. The Center for Excellence in Learning and Teaching (CELT), whose primary goal is to promote quality teaching and learning must provide lecturers with ongoing training and development to enable them to perform effectively in the classroom. This is especially important for appointees who had no previous exposure to the higher education enviroment i.e. appointees who only have industry experience. Performance management systems should clearly state the teaching responsibilities of lecturers, measurement criteria for performance and the consequences of non performance. Another layer of accountability is the feedback received from students in lecturer evaluation questionaires. Such questionaires provide a platform for students to raise concerns relating to lecturer performance and hold the lecturer accountable.

One of the objectives of a university is to produce high quality graduates for the job market (Manarbek et al., 2020). Low student throughput rates have ben identified as one of the risks that hamper institutions from achieving these goals (Van der Westhuizen, 2023). The King's Code recommends the implementation of a risk management process to deal with risks faced by an organisation. The university council is ultimately responsible for the governance of risk and must ensure that suitable policies are implemented in this regard. This entails the development of a risk management plan that identifies, assesses and treats risks (Berg, 2010). One of the key strategies used in the management of low throughput and at-risk students is the use of academic support services. Academic support services comprise tutorials, mentoring, writing programmes and academic advising, amongst others. Research has shown that there is a positive relationship between academic support and student performance (Thompson & Mazer, 2009; Woolcot et al., 2021). Universities must have policies in place relating to the provision and management of academic support. Policies should clearly stipulate the types of academic support provided, the resources needed and the responsible parties. Academic support is usually co-ordinated by the Centre for Excellence in Learning and Teaching (CELT). Heads of departments must ensure that lecturers are aware of the types of support provided and the process involved in referring students for support. The departments need to make students aware of the academic support provided by the

university. This is usually done at orientation programmes. Once a student has been identified as needing academic support, they should be referred to the relevant department. The risk management process then requires that the effectiveness of the interventions be measured using metrics. This is in line with the King's Code on risk management.

The aim of the study was to explore the use of risk management as a tool to to manage the risk of low student throughput. The study looked at identifying major risks related to this phenomenon and to assess how risk management tools, techniques, processes, and decision-making can alleviate throughput and to strategise a way forward.

7.2 RESPONSE TO THE RESEARCH QUESTIONS

This study sought to answer three questions. To answer these research questions I conducted a literature review of the major issues surrounding low student througput. Academic factors that compromised low throughput rates was the major drivers of the study. The responses to the questions have been presented to give an understanding of what some of the current risks are relating to low student throughput and how a risk management approach could be used to address these risks.

7.2.1 Research Question One

What policies, programmes and academic processes are currently implemented to manage and enhance student throughput at the DUT?

Upon the researcher's review of policy documents, minutes of meetings and examination of the institutions website, various policies relating to the management of student throughput were identified. Similar to many other universities, the Durban University of Technology (DUT) offers a comprehensive First Year Student Experience (FYSE) program, known as "ADAPT@DUT," to support first-year students' transition into university life. This program aims to facilitate smooth academic and campus integration, foster a sense of belonging, and promote student success and retention. Key aspects of the FYSE program include:

Orientation

The program includes a week-long orientation to introduce students to the university's services, resources, and academic requirements.

Experiential Learning

It provides opportunities for first-year students to engage in experiential learning activities that foster a sense of belonging and active participation.

Holistic Support

The FYSE program is designed to support students' holistic development and success, both academically and personally.

Faculty and Department Involvement

It involves partnerships with various faculties, support units, and student leaders to provide a comprehensive and supportive environment for first-year students.

Student Success

The program aims to increase student retention and improve academic performance in the first year. These are done by providing various academic and non-academic support services.

The FYSE program is a collaborative effort between various DUT departments, including:

- **Centre for Excellence in Learning and Teaching (CELT):** CELT plays a key role in developing and implementing the FYSE program.
- **Student Support and Development (SSD):** The SSD unit offers various services to support students' academic and personal needs.
- **Student Governance and Development:** Student leaders and student governance play an active role in the FYSE program.

Research has indicated that students who participate in FYSE programmes are more likely to return for their second year and are also more likely to graduate within regulation time (Goodman & Pascarella, 2018). Participants stated that early

tracking and timely support for at-risk students is a valuable tool to manage throughput.

The university also has an Extended Curricular Programme (ECP) in place which is aimed at assisting previously disadvantaged learners. This programme extends the traditional three year diploma by an additional year. The extra year includes additional modules that assist students in developing a solid academic foundation. The ECP programme has been found to be very effective in increasing student success and throughput rates (Slabbert & Friedrich-Nel, 2015; Johnson, 2017; Mgutshini, 2022). Participants concurred with this view.

The Siyaphumelela (We Succeed) project was launched by the South African Institute for Distance Education (SAIDE). The main aim of the project is to use data analytics to assist in improving undergraduate throughput rates. Data analytics entails the use of large quantities of student data (big data) that can be used to identify patterns and trends to predict student success, recognise current obstacles that prevent effective teaching and learning to take place as well as designing suitable interventions (Judd et al., 2017; Cele, 2021). In addition, big data can be used by universities to increase transparency of student's needs and creating predictive models for performance. Arising out of the Siyaphumelela Project was the launch of the Autoscholar Advisor System which can be used to identify at-risk students and provide timeous interventions through academic advising and other support mechanisms. Participants expressed the need for training to effectively use the Autoscholar advisor system. In addition, participants were concerned with the number of academic advisors available to provide quality support for all students.

Student evaluations are common practice in identifying concerns relating to a lecturer (Johnson, 2000). Lecturer Evaluation Questionnaires are required to be administered to students once in a year at DUT. The purpose of the questionnaire is to highlight any teaching and learning concerns that learners may have with their subject lecturer and implement timely interventions. Participants also recognise that heads of departments may play a facilitating role in the management of at-risk students by analysing lecturer evaluations to identify students concerns and

implementing timely interventions (De Neve, 1991; Hobson & Talbot, 2001; Sherwani & Singh, 2015). Fifty-nine percent of respondents stated that student evaluations should be administered by an independent department so that it cannot be manipulated by lecturers. Eighteen percent of respondents claimed that they never received feedback from the lecturer evaluations. The above are some of the policies and processes in place to manage the risk of low throughput.

7.2.2 Research Question Two

What are some of the academic risks relating to student throughput at the DUT?

Academic risks are any risks that may affect the throughput and graduation rates of students. The identification and management of at-risk students plays a crucial role in the promotion of student throughput (Vasquez et al., 2015; Lavhelani, 2020). Identifying and supporting at risk students is crucial in managing low throughput. Upon examination of institutional documents, there is no policy in place to identify and manage at-risk students. Participant's view the G-17 rule contained in the general handbook which relates to students who do not meet the progression requirements for their programme as an at-risk policy. In addition, participants do not understand the difference between policies and processes. While there is no at-risk policy, there are only academic processes from the departments that are used to mitigate at-risk students. These processes vary from department to department. However, eighty-five percent of respondents stated that they were aware of what an at-risk student is while sixty-nine percent of respondents stated that they were aware of the universities at-risk policy. The university should have a formal at-risk policy in place that needs to be disseminated to all staff and students. Further, all staff induction in this area may be beneficial (Vernon, 2023).

Lecturer competencies play a key role in ensuring that students succeed (Wilson-Strydom, 2015; Latip et al., 2020). Competencies relate to the knowledge, skills and experience possessed by the lecturer (Wong, 2020). The participants recognise the need for lecturers to have industry experience in their subject areas, which is consistent with Mian et al., (2020) who assert that lecturers need to have relevant industry experience to effectively train students for the world of work. Sixty-one

percent of respondents stated that all lecturers should have industry experience in their subject matter. Upon examination of institutional policies and various vacancy advertisements, the researcher established that there was no pre-requiste for an academic to have industry experience in order to be employed at the institution. The universities employment policy for academics should specify the need for relevant industry experience.

Tutorials are an effective form of academic support (Balwant & Doon, 2021). However, in order for tutorials to be effective, it needs to be properly managed. Participants noted that large tutorial classes compromise the value of tutorship. Thirty percent of respondents stated that tutorial classes were too large while eighty-seven percent of students stated that there was a need for more tutorial classes. Upon review of institutional policies, tutorials were rendered by the institution as a form of support. However, there is no stipulation of the class size of a tutorial group. It is recommended that the institutions policy be revised to include more details surrounding the management of tutorials.

7.2.3 Research Question Three

What suitable interventions can be implemented to mitigate the risk of low student throughput?

Whilst the university has many interventions in place to mitigate the risk of low throughput rates, additional measures could be implemented to bolster this initiative. Academic performance in prior years of study is a good indicator of academic performance at university (Maksy & Wagaman, 2016). In addition to the National Senior Certificate (NSC), institutions should also consider the use of National Benchmark Tests (BT) which provides information about the behaviour that can be expected of a learner with a certain score. Admissions that rely solely on the NSC performance may result in the selection of students who are not adequately prepared. The NBT may help with the selection and suitable placement of students as well as identify those that need support (Carpenter & Roos, 2021).

The use of peer tutoring should be considered in addition to traditional tutorials. This form of tutorials makes use of senior students who have excelled at their studies to

teach low level students. Peer tutoring encourages student engagement as students feel more comfortable in with their fellow students. In addition, since the tutors and students communicate in their mother tongue, language barriers are removed. This in turn leads to increased pass and throughput rates (Thurston et al., 2021).

The use of learning analytics as a tool to gain insights about students' learning challenges and improve student throughput has been gaining momentum in recent years. Learning analytics entails the use of analytic techniques like predictive modelling to analyse student and lecturer data in order to identify common patterns and thereby take action to enhance teaching and learning (Siemens & Long, 2011; Davenport et al., 2010). The use of learning analytics, as an intervention, has assisted in the early identification of at-risk students and the improvement in throughput rates, especially in countries like the United Kingdom and Australia.

Learning analytics has been studied and implemented in other countries, such as the United Kingdom, Australia, and other parts of Europe. In these countries, learning analytics are one of the systematic ways of analysing data and has been reported to have the ability to improve student success and throughput. It also provides an opportunity for the early identification of students who are at risk (Gašević et al., 2015).

The above are some of the additional interventions that can be explored as a means to enhance student throughput.

7.3 RECOMMENDATIONS

The following recommendations are made from the study:

- The university should craft an 'at-risk' policy that provides specific details on the identification and management of 'at-risk' students. The policy should be widely disseminated to all relevant stakeholders.
- All academic staff need to be trained on the use of the 'Auto-Scholar' system and how it can be used to identify and track at-risk students.

- Employment policies for academics should specify the need for potential candidates to have industry experience as a pre-requisite.
- Students should be given timeous feedback on the outcome of the lecturer evaluations. In addition, heads of department should evaluate outcomes of lecturer evaluations and raise any concerns with lecturers with a view to implementing suitable interventions.
- Students should be made aware of all the academic support services that are provided by the university by lecturers. Student orientation programmes should be used as a platform to reinforce this.
- The institution should consider the use of data metrics to evaluate the success of its academic support services.
- Consideration should be given for tutorial attendance to contribute a percentage towards a student's year-mark.
- The university should explore the use of residential based tutorials as an addition to its existing tutorial system.
- Open communication channels should be established between academics and the Centre for Excellence in Learning and Teaching (CELT) so that lecturers can refer students who are struggling academically to the relevant persons.

7.4 LIMITATIONS OF THE STUDY

Despite endeavouring to make a contribution towards the use of risk management in managing student throughput, several limitations were identified:

- The study was based on a single institution and the findings are limited to this institution.
- The study was confined to the Accounting Cluster, which included the Departments of Financial Accounting, Auditing, Tax and Management Accounting. As such, these findings cannot be generalised to other departments.
- The study only focused on lecturers, academic support services and assessments in relation to management of student throughput.

7.5 RECOMMENDATIONS FOR FUTURE RESEARCH

- The study should be conducted at all universities in South Africa and should include all departments.
- Research should be conducted on the creation of a model for risk management models to manage student throughput.
- Future studies could look at all risks facing higher education institutions and not be limited to student throughput.

7.6 CONCLUSION

The aim of the study was to explore the use of risk management as an aid for student throughput using a case study approach. South African corporate governance practices (King III report and King IV report) embraces the importance of risk management which has been documented for different government, corporate and private sectors. Moreover, most HEIs are using King III report governance policy framework and regulations which provides support and understanding of the importance of risk management. The statistical findings that emerged from the empirical analysis of both quantitative and qualitative data revealed that the use of risk management practices could aid in the increase of throughput rates. These findings revealed a need to review risk management policies and practices particularly at middle and lower management level as well as at lecturer level. Although there are higher education policies and procedures relating to risk management, there is a need for internal institutional processes to be put in place. This could lead to an improvement in throughput rates. Furthermore, risk management needs to be viewed holistically and all employees should understand their role in this process.

REFERENCES

Ababneh, O. M. A. (2021). The impact of organizational culture archetypes on quality performance and total quality management: the role of employee engagement and individual values. *International Journal of Quality & Reliability Management*, *38*(6), 1387-1408.

Abba, Z. Y. I., Balta-Ozkan, N., & Hart, P. (2022). A holistic risk management framework for renewable energy investments. *Renewable and Sustainable Energy Reviews*, *160*, 22 (2), 112 -305.

Abhayawansa, S., Adams, C. A., & Neesham, C. (2021). Accountability and governance in pursuit of Sustainable Development Goals: conceptualising how governments create value. *Accounting, Auditing & Accountability Journal*, *34*(4), 923-945.

Abrams, H. G., & Jernigan, L. P. (1984). Academic support services and the success of high-risk college students. *American Educational Research Journal*, *21*(2), 261-274.

Adebola, O. O. (2020). The use of supplemental instruction in university classrooms as a strategy to enhance the academic performance of first-year students. *Universal Journal of Educational Research, 8*(11B), 6289-6296.

Adeoye, M. A. (2023). Review of sampling techniques for education. *ASEAN Journal for Science Education*, *2*(2), 87-94.

Adeoye-Olatunde, O. A., & Olenik, N. L. (2021). Research and scholarly methods: Semi-structured interviews. *Journal of the American College of Clinical Pharmacy*, *4*(10), 1358-1367.

Ahmed, M., & Shafiq, S. (2014). The impact of organizational culture on organizational performance: A case study of telecom sector. *Global Journal of Management and Business Research*, *14*(3), 21-30.

Aina, C., Baici, E., Casalone, G., & Pastore, F. (2022). The determinants of university dropout: A review of the socio-economic literature. *Socio-Economic Planning Sciences*, *79*, 22 (3), 101-102.

Ajayi, V. O. (2017). Primary sources of data and secondary sources of data. *Benue State University*, *1*(1), 1-6.

Akalu, G. A. (2016). Higher education 'massification' and challenges to the professoriate: do academics' conceptions of quality matter? *Quality in Higher Education*, *22*(3), 260-276. https://www.tandfonline.com/doi/pdf/10.1080/13538322.2016.1266230?casa_token=4EmYk8SZG94AAAAA:w8555-F0r1r23vY7qw6GERNwPjbNJrH7cL9IW55ezYB5tpldGb5P6jle6tvZF3Ca5qvUXPC5yeM0

Akoojee, S., & Nkomo, M. (2007). Access and quality in South African higher education: The twin challenges of transformation. *South African Journal of Higher Education*, *21*(3), 385-399. Access and quality in South African higher education : the twin challenges of transformation (journals.co.za)

Albertyn, R. M., Machika, P., & Troskie-de Bruin, C. (2016). Towards responsible massification: Some pointers for supporting lecturers. *Africa Education Review*, *13*(3-4), 49-64. https://www.tandfonline.com/doi/abs/10.1080/18146627.2016.1224577?casa_token=0ORcqtx1usYAAAAA:_PRh3qendCq-5eRwWpY6QvcIHqTcdQc9iIZTPNRMNL5kCgyqOrlgHCMHTVGZkvoC0fSJCfNEPiog0A4

Alharahsheh, H. H., & Pius, A. (2020). A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, *2*(3), 39-43.

Abdul-Alim, J. (2014). Black Achievement Stats Belie South Africa's Post-Apartheid Success Story. *Diverse Issues in Higher Education*. https://www.ru.ac.za/latestnews/archives/2014%20archive/blackachievementstatsbeliesouthafricaspost-apartheidsuccessstory.html

Altbach, P. G. (2007). *Tradition and transition: The international imperative in higher education* (Vol. 7). Brill. https://books.google.co.za/books?hl=en&lr=&id=i3ofEAAAQBAJ&oi=fnd&pg=PR5&dq=Altbach,+P.+G.+(2007).+Tradition+and+transition:+The+international+imperative+in+higher+education+(Vol.+7).+Brill.&ots=EGcnX9ijkT&sig=mhbIhSQsLh9hqoJ2QOCyy6iqJNw&redir_esc=y#v=onepage&q&f=false

Altbach, P. G. (2013). The international imperative in higher education. In *The International Imperative in Higher Education*. Brill.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2019). *Trends in global higher education: Tracking an academic revolution* (Vol. 22). Brill. https://atepie.cep.edu.rs/public/Altbach%2C_Reisberg%2C_Rumbley_Tracking_an_Academic_Revolution%2C_UNESCO_2009.pdf

Ambler, T., & Wilson, A. (1995). Problems of stakeholder theory. *Business Ethics: A European Review*, *4*(1), 30-35.

Angu, P. E. (2019). Students' Experiences of Teamwork: Dealing with Conflicting Identities. *The International Journal of Diversity in Education*, *19*(1), 11-21

Angu, P. E. (2022). Remote Teaching and Learning at a South African University During Covid-19 Lockdown: Moments of Resilience, Agency and Resignation in First-Year Students' Online Discussions. *International Journal of Learning, Teaching and Educational Research*, *21*(8), 219-234.

Anthony, R. A. (1991). Interpretive rules, policy statements, guidance's, manuals, and the like--should federal agencies use them to bind the public. *Duke LJ*, *41*, 1311.

Antonakis, J., Schriesheim, C. A., Donovan, J. A., Gopalakrishna-Pillai, K., Pellegrini, E. K., & Rossomme, J. L. (2004). Methods for studying leadership. *The nature of leadership*, 48-70.

APPA Centre for Facilities Research (2018). *The landscape, framework, and strategies for managing & mitigating risk.* Association of Higher Education Facilities Officers.
https://files.eric.ed.gov/fulltext/ED592253.pdf

Araque, F., Concepción, R., and Alberto, S. (2009). Factors influencing university drop out rates. *Computers & Education, 53*(3), 563-574.

Araújo, A. M., Leite, C., Costa, P., & Costa, M. J. (2019). Early identification of first-year students at risk of dropping out of high-school entry medical school: the usefulness of teachers' ratings of class participation. *Advances in Health Sciences Education*, *24*, 251-268. Early identification of first-year students at risk of dropping out of high-school entry medical school: the usefulness of teachers' ratings of class participation | Advances in Health Sciences Education (springer.com)

Archambault, M., & Archambault, J. (2016). Senior Level Accounting Course Performance and the Timing of Completing Intermediate Accounting II. *International Journal of Accounting and Taxation*, *4*(2), 12-24.

Arco-Tirado, J. L., Fernandez-Martin, F. D., & Hervas-Torres, M. (2020). Evidence-based peer-tutoring program to improve students' performance at the university. *Studies in Higher Education*, *45*(11), 2190-2202.

Asiamah, N., Mensah, H., & Oteng-Abayie, E. F. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report*, *22*(6), 1607-1621.

Asiyai, R. I. (2022). Best practices for quality assurance in higher education: implications for educational administration. *International Journal of Leadership in Education*, *25*(5), 843-854.
https://www.tandfonline.com/doi/pdf/10.1080/13603124.2019.1710569?casa_token=DKsaLIeIsgEAAAAA:wOW8bTBNFIP3XoVmULhRdYbu8_tncAbnTsBWJfSk6Lwjf_8LLmoZvmqVUoodhxFpX5KzIxJUnX64

Atif, A., Richards, D., Liu, D., & Bilgin, A. A. (2020). Perceived benefits and barriers of a prototype early alert system to detect engagement and support 'at-risk' students: The teacher perspective. *Computers & Education*, *156*, 103954.

Avella, J. T., Kebritchi, M., Nunn, S. G., & Kanai, T. (2016). Learning analytics methods, benefits, and challenges in higher education: A systematic literature review. *Online Learning*, *20*(2), 13-29. https://eric.ed.gov/?id=EJ1105911

Aven, T., & Reniers, G. (2013). How to define and interpret a probability in a risk and safety setting. *Safety Science*, *51*(1), 223-231.

Aven, T. (2016). Risk assessment and risk management: Review of recent advances on their foundation. *European Journal of Operational Research*, *253*(1), 1-13.

Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society*, *9(2)*, 101-235.

Azungah, T. (2018). Qualitative research: deductive and inductive approaches to data analysis. *Qualitative Research Journal*, *18*(4), 383-400.

Babbie, E. R., & Mouton, J. (2001). *The practice of social research*. (8th ed.) Oxford University Press.

Babbie, E. R. (2015). *The practice of social research.* Cape Town: Oxford University Press: Nelson Education.

Bacq, S., & Aguilera, R. V. (2022). Stakeholder governance for responsible innovation: A theory of value creation, appropriation, and distribution. *Journal of Management Studies*, *59*(1), 29-60.

Badat, S. (2010). The challenges of transformation in higher education and training institutions in South Africa. *Development Bank of Southern Africa*, *8*(1), 1-37.

Badat, S. (2015). Institutional combinations and the creation of a new higher education institutional landscape in post-1994 South Africa. *Mergers and Alliances in higher education: International practice and emerging opportunities*, 175-201.

Bailey, T. H., & Phillips, L. J. (2016). The influence of motivation and adaptation on students' subjective well-being, meaning in life and academic performance. *Higher Education Research & Development*, *35*(2), 201-216.

Baker, J., Bradley, B., & Stafford, P. (2021). *Seismic hazard and risk analysis*. Cambridge University Press.

Balwant, P. T., & Doon, R. (2021). Alternatives to the conventional 'Oxford' tutorial model: a scoping review. *International Journal of Educational Technology in Higher Education*, *18*(1), 29.

Banik, A., Gupta, A. D., & Bhaumik, P. K. (2015). *Corporate governance, responsibility and sustainability: Initiatives in emerging economies*. Palgrave Macmillan. https://doi.org/https://www.palgrave.com/gp/book/9781137361844

Bartesaghi, M., Grey, S. H., & Gibson, S. (2012). Defining (the concept of) risk. *Poroi*, *8*(1).

Basti, M., & Madadizadeh, F. (2021). A beginner's guide to sampling methods in medical research. *Critical Comments in Biomedicine*. 23(5), 97-215

Bates, M. (2011). Work-integrated learning workloads: The realities and responsibilities. *International Journal of Work-Integrated Learning*, *12*(2), 111.

Baverstock, A., & Wenger, D. (2018). What value do academic qualifications have within a profession-oriented discipline? *Journalism Education*, *6*(3), 72-84.

Bawa, A. C. (2019). South Africa's higher education system in crisis… in a state in crisis. *Social Research: An International Quarterly*, *86*(1), 253-277.

Bean, J. P. (1982). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education*, *17*, 291-320.

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of non-traditional student attrition. *American Educational Research Association*, 55(4), 485-540. http://www.jstor.org/stable/1170245

Behr, A., Giese, M., Teguim Kamdjou, H. D., & Theune, K. (2020). Dropping out of university: a literature review. *Review of Education*, *8*(2), 614-652.

Belluz, T. R. (2008). *Coaching as a leadership communication practice in the development of a culture of patient safety* (Doctoral dissertation, Royal Roads University).

Berg, H. P. (2010). Risk management: procedures, methods and experiences. *Reliability: Theory & Applications*, *5*(2 (17)), 79-95.

Bergin, T. (2018). An introduction to data analysis: Quantitative, qualitative and mixed methods. New York: Wiley.

Bernstein, P. L., & Bernstein, P. L. (1996). *Against the gods: The remarkable story of risk* (p. 400). New York: Wiley.

Bhana, A. (2018). *The Application of Ethical Leadership Styles on Employee Engagement at* (Doctoral dissertation, Durban University of Technology).

Blackman, D., & Kennedy, M. (2009). Knowledge management and effective university governance. *Journal of Knowledge Management*, *13*(6), 547-563.

Blair, G., Woodcock, H., Pagano, R., & Endlar, L. (2024). Constructing a Risk Management Framework to Protect the Organization. *Journal of UTEC Engineering Management*, *2*(1), 113-124.

Blumberg, B., Cooper, D., & Schindler, P. (2014). *EBOOK: Business research methods*. McGraw Hill.

Bohlmann, C. A., Prince, R. N., & Deacon, A. (2017). Mathematical errors made by high performing candidates writing the National Benchmark Tests.

Pythagoras, *38*(1), 1-10. https://open.uct.ac.za/server/api/core/bitstreams/b82134ba-6c9f-40c0-a913-ad1fc63c95b0/content

Borowy, I. (2013). *Defining sustainable development for our common future: A history of the World Commission on Environment and Development (Brundtland Commission)*. Routledge.

Bothma, F., & Rossouw, J. P. (2019). The accountability and professional security of the South African higher education lecturer. *South African Journal of Higher Education*, *33*(2), 29-51.

Bozalek, V. (2021). Slow Scholarship: Propositions for the Extended Curriculum Programme. *Education as Change*, *25*(1). https://pdfs.semanticscholar.org/7a79/2cc546128b2891d5774943165d5c1589456d.pdf

Brannen, J. (2017). Combining qualitative and quantitative approaches: an overview. *Mixing methods: Qualitative and Quantitative Research*, 3-37. Taylor Francis.

Branson, N., & Whitelaw, E. (2024). South African student retention during 2020: Evidence from system-wide higher education institutional data. *South African Journal of Economics*, *92*(1), 9-30.

Braumann, E. C., Grabner, I., & Posch, A. (2020). Tone from the top in risk management: A complementarity perspective on how control systems influence risk awareness. *Accounting, Organizations and Society*, *84*, 101128.

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*, *395*(10227), 912-920. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30460-8/fulltext?cid=in%3Adisplay%3Alfhtn0&dclid=CNKCgb7nle0CFVUkjwodG0YCkg

Brown, J. D., & Damery, S. L. (2009). Uncertainty and risk. *A companion to environmental geography*, 81-94.

Browne, S., Perrier, R., & Lakehead University. (2015). *Discovering the Benefits of a First-Year Experience Program for At-Risk Students: Quantitative Follow-up Analysis*. Higher Education Quality Council of Ontario.

Brown, K. D. (2016). *After the" at-risk" label: reorienting educational policy and practice*. Teachers College Press.

Brown, P., & James, D. (2020). Educational expansion, poverty reduction and social mobility: Reframing the debate. *International Journal of Educational Research*, *100*, 101537. 19(7), 13-19

https://www.sciencedirect.com/science/article/pii/S0883035519313151?casa_token=D84ahM8gROoAAAAA:Cw_BJ1pt4cV0mLDl8UnpEkLR--V-r2KlZGvjfhFJR0S5nhUF8RtDQp6Mutn_v_ynetrOwPAFpQ

Brunsden, V., Davies, M., Shevlin, M., & Bracken, M. (2000). Why do HE students drop out? A test of Tinto's model. *Journal of further and Higher Education*, *24*(3), 301-310.

Buja, A., Damiani, G., Manfredi, M., Zampieri, C., Dentuti, E., Grotto, G., & Sabatelli, G. (2022). Governance for patient safety: a framework of strategy domains for risk management. *Journal of Patient Safety*, *18*(4), e769-e800.

Bunting, I. (2006). The higher education landscape under apartheid. In *Transformation in higher education: Global pressures and local realities* (pp. 35-52). Dordrecht: Springer Netherlands.

Buschle, C., Reiter, H., & Bethmann, A. (2022). The qualitative pretest interview for questionnaire development: outline of programme and practice. *Quality & Quantity*, *56*(2), 823-842.

BusinessTech. (2024, Nov 5). *Fired for not getting a master's degree – what the law says.* https://businesstech.co.za/news/business/798302/fired-for-not-getting-a-masters-degree-what-the-law-says/

Caceres, M. M. F., Sosa, J. P., Lawrence, J. A., Sestacovschi, C., Tidd-Johnson, A., Rasool, M. H. U., ... & Fernandez, J. P. (2022). The impact of misinformation on the COVID-19 pandemic. *AIMS Public Health*, *9*(2), 262. https://pmc.ncbi.nlm.nih.gov/articles/PMC9114791/

Callaghan, C. W., & Papageorgiou, E. (2020). Personality, gender and student performance at a South African university. *Africa Education Review*, *17*(1), 66-82.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., ... & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, *25*(8), 652-661.

Carpenter, D. R., & Jenks, J. M. (2003). Triangulation as a qualitative research strategy. *Qualitative research in nursing: advancing the humanistic imperative. 3rd ed. Philadelphia (PA): Lippincott*, 349-60. Qualitative Research in Nursing: Advancing the Humanistic Imperative, Fifth Edition (lww.com)

Carpenter, R., & Roos, L. (2021). The relationship between the National Senior Certificate and the National Benchmark Test for accounting students at a South African university. *The Business & Management Review*, *12*(1), 242-249.

Casanova, J. R., Vasconcelos, R., Bernardo, A. B., & Almeida, L. S. (2021). University dropout in engineering: motives and student trajectories. 7(2), 18-28

Cele, N. (2021). Big data-driven early alert systems as means of enhancing university student retention and success. *South African Journal of Higher Education*, *35*(2), 56-72. https://journals.co.za/doi/abs/10.20853/35-2-3899

Centanni, D. M. (2023). *Using Interpretive Phenomenological Analysis to Explore the Experiences of Academic Advisors Who Serve Risk-Identified Students in Distance-Based Settings* (Doctoral dissertation, State University of New York at Buffalo).

Chalmer, B. J. (2020). *Understanding statistics*. CRC Press.

Chen, Wei-Lin. 2017. Understanding the Student Success Gap: Building Models for Underrepresented Racial Minority and Non-Traditional Students' College Experience in Community College. PhD diss., University of Iowa.

Chen, Y. L., Chuang, Y. W., Huang, H. G., & Shih, J. Y. (2020). The value of implementing enterprise risk management: Evidence from Taiwan's financial industry. *The North American Journal of Economics and Finance*, *54*, 100926.

Christie, P. (2008). *Opening the doors of learning: Changing schools in South Africa* (p. 18). Johannesburg: Heinemann. https://www.researchgate.net/profile/Pam-Christie/publication/43508888_Changing_schools_in_South_Africa_Opening_the_doors_of_learning/links/55ffc8f708ae07629e51db10/Changing-schools-in-South-Africa-Opening-the-doors-of-learning.pdf

Cho, Y. H. (2017). Towards an engaged campus: measuring and comparing definitive stakeholders' perceptions of university social engagement in South Korea. *International Journal of Sustainability in Higher Education, 18*(2), 185-202.

Choudhary, R., & Malthus, C. (2017). The impact of targeted mathematics/numeracy tutorials on maths anxiety, numeracy and basic drug calculation exam marks. *Journal of Academic Language and Learning*, *11*(1), A1-A22. https://journal.aall.org.au/index.php/jall/article/view/424

Cliff, A. (2015). The National Benchmark Test in Academic Literacy: how might it be used to support teaching in higher education? *Language Matters*, *46*(1), 3-21. https://www.tandfonline.com/doi/pdf/10.1080/10228195.2015.1027505?casa_token=Va98sDtCaYYAAAAA:xx0wLwb4YrN07T8EeLog1qAt8sT6iNVbWDZFTaFGRwwYaZjVHIr2WlQwhH-rO2NrCLiacYZmJGwi

Coghlan, S., Miller, T., & Paterson, J. (2021). Good proctor or "big brother"? Ethics of online exam supervision technologies. *Philosophy & Technology*, *34*(4), 1581-1606. https://link.springer.com/article/10.1007/s13347-021-00476-1

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. (5th ed.). Routledge. https://doi.org/10.4324/9780203224342

Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education*. Routledge.

https://ds.amu.edu.et/xmlui/bitstream/handle/123456789/2490/Research-Methods-in-Education-sixth-edition.pdf?sequence=1&isAllowed=y

Cohen, L., Manion, L., & Morrison, K. (2017). Validity and reliability. In *Research methods in education* (pp. 245-284). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315456539-14/validity-reliability-louis-cohen-lawrence-manion-keith-morrison

Collins, S. R. 2012. Bridging the Gap between Access and Success: A Study of the Impact of an Access and Success Program on Academic Outcomes of Low-Income College Freshmen. PhD diss., University of North Texas.

Committee of Sponsoring Organisations. (2004, May 12). *Enterprise risk management*. https://www.coso.org/guidance-erm

Cooper, D. (2015). Social Justice and South African University Student Enrolment Data by 'Race', 1998–2012: From 'Skewed Revolution 'to 'Stalled Revolution'. *Higher Education Quarterly*, *69*(3), 237-262.

Coughlan, F. (2006). Access for success. *South African Journal of Higher Education*, *20*(2), 209-218.

Coulson, K., & Loddick, A. (2020). The impact of Learning Development tutorials on student attainment. *Journal of Learning Development in Higher Education*, *17*(1), 1-24.

Council on Higher Education. (2001). *Annual Report.* Pretoria: Government Printer. http://www.che.org.za

Council on Higher Education. (2014). *VitalStats: Public Higher Education 2012.* Pretoria: Government Printer. file:///C:/Users/rajeshr/Downloads/VitalStats%202012%20Web_2.pdf

Council on Higher Education. (2018). *VitalStats: Public Higher Education 2016.* Pretoria: Government Printer.

Crane, B. (2020). Revisiting who, when, and why stakeholders matter: Trust and stakeholder connectedness. *Business & Society, 59*(2), 263-286.

Creswell, J. W., & Plano Clark, V. L. (2011). Choosing a mixed methods design. *Designing and Conducting Mixed Methods Research*, *2*(1), 53-106.

Creswell, J. W., Ebersohn, L., Eloff, I., Ferreira, R., Ivankova, N. V., Jansen, J. D., & Van der Westhuizen, C. (2016). *First steps P research.* Pretoria: Van Schaik Publishers.

Creswell, J. W. (2021). *A concise introduction to mixed methods research*. SAGE publications.

Crous, C. (2017). *Corporate governance in South African higher education institutions* (Doctoral dissertation, University of the Free State).

Dabrowski, A., & Mitchell, P. (2022). Effects of remote learning on mental health and socialisation. Literature Review. https://research.acer.edu.au/tll_misc/36/

Dadashzadeh, M. (2021). The Online Examination Dilemma: To Proctor or Not to Proctor? *Journal of Instructional Pedagogies*, *25*. https://eric.ed.gov/?id=EJ1294386

Daniels, A. D., & Jooste, K. (2018). Support of students by academics in a nursing foundation programme at a university in the Western Cape. *Curationis*, *41*(1), 1-7. https://journals.co.za/doi/abs/10.4102/curationis.v41i1.1927

Davenport, T. H., Harris, J., & Shapiro, J. (2010). Competing on talent analytics. *Harvard Business Review*, *88*(10), 52-58.

Davidovich, N., & Eckhaus, E. (2019). Student Evaluation of Lecturers--What Do Faculty Members Think about the Damage Caused by Teaching Surveys? *Higher Education Studies*, *9*(3), 12-21. https://eric.ed.gov/?id=EJ1217956

Davis, P. M. (2020). Statistics for describing populations. In *Handbook of sampling methods for arthropods in agriculture* (pp. 33-54). CRC Press.

Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, *2*(2), 25-36.

Deckert, J., & Wilson, M. (2023). *Descriptive Research Methods.* Research methods in the dance sciences/edited by Tom Welsh, Jatin, 153.

Demir, S. B., & Pismek, N. (2018). A Convergent Parallel Mixed-Methods Study of Controversial Issues in Social Studies Classes: A Clash of Ideologies. *Educational Sciences: Theory and Practice*, *18*(1), 119-149.

De Neve, H. M. (1991). University teachers' thinking about lecturing: Student evaluation of lecturing as an improvement perspective for the lecturer. *Higher Education*, *22*(1), 63-89.

Denzin, N. K. (2008). *The landscape of qualitative research* (Vol. 1). Sage.

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The Sage handbook of qualitative research*. Sage.

Department of Education. (1997). *A programme for the transformation of higher education* [White paper]. https://www.gov.za/documents/programme-transformation-higher-education-education-white-paper

Department of Education. (1997). *Higher Education Act 101 of 1997.* Higher Education Act 101 of 1997 | South African Government (www.gov.za)

Department of Education. (2003). *Draft regulations for annual reporting by higher education institutions.* (Report 24947). https://www.gov.za/sites/default/files/gcis_document/201409/249471.pdf

Department of Higher Education and Training. (2003). *Implementation manual for reporting by public higher education institutions.* South African Government. www.dhet.gov.za

Department of Higher Education and Training. (2007). *Implementation manual for reporting by public higher education institutions.* South African Government. www.dhet.gov.za

Department of Higher Education and Training. (2013). *Statistics on post-school education and training in South Africa: 2013* (Report 7253). https://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202013.pdf

Department of Higher Education and Training. (2014). *Implementation manual for reporting by public higher education institutions.* South African Government. www.dhet.gov.za

Department of Higher Education and Training, Republic of South Africa. (2019). 2000 to 2016 First Time Entering Undergraduate Cohort Studies for Public Higher Education Institutions.

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, *49*(1), 5-22. https://journals.sagepub.com/doi/full/10.1177/0047239520934018

Dison, L., Shalem, Y., & Langsford, D. (2019). Resourcefulness matters: Student patterns for coping with structural and academic challenges. *South African Journal of Higher Education*, *33*(4), 76-93.

Dladla, P. (2020). *Sources of risk in insurance markets* (Doctoral dissertation, University of the Witwatersrand, Johannesburg).

d'Orville, H. (2020). COVID-19 causes unprecedented educational disruption: Is there a road towards a new normal? *Prospects*, *49*(1), 11-15.

Dobrovská, D., & Andres, P. (2016). Engineering pedagogy students attitudes on teaching quality. *Acta Educationis Generalis*, *6*(1), 42-48. https://intapi.sciendo.com/pdf/10.1515/atd-2016-0005

Donnell, W. M., Walker, G. C., & Miller, G. (2018). Statewide at-risk tracking and intervention for nurses: Identifying and intervening with nursing students at risk of attrition in Texas. *Nursing Education Perspectives*, *39*(3), 145-150.

Dorasamy, N. (2013). Role of student ratings of lecturers in enhancing teaching at higher education institutions: A case study of the Durban University of Technology. *Journal of Economics and Behavioural Studies*, *5*(5), 268-281. https://ojs.amhinternational.com/index.php/jebs/article/view/403

Douglas, M. (2020). Risk as a forensic resource. In *Risk Management* (pp. 1-16). Routledge.

Dube, Z. L. (2016). The King Reports on Corporate Governance in South Africa: An Ubuntu African Philosophy Analysis. *Corporate governance in Africa: assessing implementation and ethical perspectives*, 199-222.

Dube, B. (2020). Rural online learning in the context of COVID 19 in South Africa: Evoking an inclusive education approach. *REMIE: Multidisciplinary Journal of Educational Research*, *10*(2), 135-157.

Du Preez, P., Verhoef, A. H., & Simmonds, S. (2016). Rethinking and researching transformation in higher education: A meta-study of South African trends. *Transformation in Higher Education*, *1*(1), 1-7. Rethinking and researching transformation in higher education : a meta-study of South African trends | Transformation in Higher Education (journals.co.za)

Durban University of Technology. (2024, 18 July). *Annual report 2020*. https://www.dut.ac.za/reports/

Durban University of Technology. (2024, 18 July). *Annual report 2021*. https://www.dut.ac.za/reports/

Duckett, L. J. (2021). Quantitative research excellence: Study design and reliable and valid measurement of variables. *Journal of Human Lactation*, *37*(3), 456-463.

Duraku, Z. H., & Hoxha, L. (2020). The impact of COVID-19 on education and on the well-being of teachers, parents, and students: Challenges related to remote (online) learning and opportunities for advancing the quality of education. Manuscript submitted for publication]. Faculty of Philosophy, University of Prishtina, 17-45. https://www.researchgate.net/profile/Zamira-Hyseni-Duraku-2/publication/341297812_The_impact_of_COVID-19_on_education_and_on_the_well-being_of_teachers_parents_and_students_Challenges_related_to_remote_online_learning_and_opportunities_for_advancing_the_quality_of_education/links/61082c46169a1a0103d425b9/The-impact-of-COVID-19-on-education-and-on-the-well-being-of-teachers-parents-and-students-Challenges-related-to-remote-online-learning-and-opportunities-for-advancing-the-quality-of-education.pdf

Dzimińska, M., Fijałkowska, J., & Sułkowski, Ł. (2020). A conceptual model proposal: Universities as culture change agents for sustainable development. *Sustainability*, *12*(11), 4635.

Eberle, J., & Hobrecht, J. (2021). The lonely struggle with autonomy: A case study of first-year university students' experiences during emergency online teaching. *Computers in Human Behavior*, *121(3)*, 106-804.

Edwards, R., & Holland, J. (2013). *What is qualitative interviewing?* (p. 128). Bloomsbury Academic.

Eiselen, R., & Geyser, H. (2003). Factors distinguishing between achievers and at-risk students: a qualitative and quantitative synthesis: research in higher education. *South African Journal of Higher Education*, *17*(2), 118.

Elberse, A. (2013). Ferguson's formula. *Harvard Business Review*, *91*(10), 116-125. Ferguson's Formula (hbr.org)

Elliott, R., & Timulak, L. (2005). Descriptive and interpretive approaches to qualitative research. *A Handbook of Research Methods for Clinical and Health Psychology*, *1*(7), 147-159.

Eloff, I., O'Neil, S., & Kanengoni, H. (2023). Students' well-being in tertiary environments: insights into the (unrecognised) role of lecturers. *Teaching in Higher Education*, *28*(7), 1777-1797.

Embarak, O. H., & Hawarna, S. (2024). Automated AI-driven System for Early Detection of At-risk Students. *Procedia Computer Science*, *231*, 151-160. Automated AI-driven System for Early Detection of At-risk Students - ScienceDirect

Emery Sr, E. (2016). Ethical Behaviour, Leadership, and Decision Making. Doctorate Degree, Walden University. Available: https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=2990&context=dissertations

Erickson, G. S. (2017). Causal research design. In *New methods of market research and analysis* (pp. 78-105). Edward Elgar Publishing.

Essien, E. (2018). Class Size and Students' Academic Achievement in Social Studies in Colleges of Education in Cross River State, Nigeria. 1, 10-17.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1-4.

Exeter, D. J., Ameratunga, S., Ratima, M., Morton, S., Dickson, M., Hsu, D., & Jackson, R. (2010). Student engagement in very large classes: The teachers' perspective. *Studies in Higher Education*, *35*(7), 761-775. https://www.tandfonline.com/doi/full/10.1080/03075070903545058?casa_token=DqtXCPyff7MAAAAA%3AVTIz1XiKFdk3BW4JGrFFJ-bCrJRvlv6haNdX0lRLdBDL1MIm3P8BtIoMqn72K8Jri_FjYOa-zVm187E

Falabella, A. (2020). The ethics of competition: accountability policy enactment in Chilean schools' everyday life. *Journal of Education Policy*, *35*(1), 23-45.

Faqih, K. M. (2022). Internet shopping in the Covid-19 era: Investigating the role of perceived risk, anxiety, gender, culture, and trust in the consumers' purchasing behavior from a developing country context. *Technology in Society*, *70 (10)*, 10-16.

Feather, N. T. (1959). Subjective probability and decision under uncertainty. *Psychological Review*, *66*(3), 150-159

Felten, P., & Lambert, L. M. (2020). *Relationship-rich education: How human connections drive success in college*. Jhu Press.

Ferman, T. (2002). Academic professional development practice: What lecturers find valuable. *The International Journal for Academic Development*, *7*(2), 146-158.

Ferrero-Ferrero, I., Fernández-Izquierdo, M. Á., Muñoz-Torres, M. J., & Bellés-Colomer, L. (2017). Stakeholder engagement in sustainability reporting in higher education: An analysis of key internal stakeholders' expectations. *International Journal of Sustainability in Higher Education*, *19*(2), 313-336.

Financial Crime Academy. (2024, Sep 24). *Sarbanes-Oxley act*. https://financialcrimeacademy.org/sarbanes-oxley-act-of-2002/?gad_source=1&gclid=Cj0KCQiA0--6BhCBARIsADYqyL85F2d9TE-GTgXL3FF5IhBc3ZMJQTDW2m-AJURAazfXZ6CwHHWUws8aAlwOEALw_wcB

Financial Stability Board. (2014, July 7). *Promoting a good risk culture. https://www.fsb.org/*

Foster, E., & Siddle, R. (2020). The effectiveness of learning analytics for identifying at-risk students in higher education. *Assessment & Evaluation in Higher Education*, *45*(6), 842-854.

Fraser, W. J., & Killen, R. (2003). Factors influencing academic success or failure of first-year and senior university students: do education students and lecturers perceive things differently? *South African Journal of Education*, *23*(4), 254-263.

Fraser, J. R., & Simkins, B. J. (2016). The challenges of and solutions for implementing enterprise risk management. *Business Horizons*, *59*(6), 689-698.

Fraser, J. R., Quail, R., & Simkins, B. (Eds.). (2021). *Enterprise risk management: Today's leading research and best practices for tomorrow's executives*. John Wiley & Sons.

Freeman, R. E. (1984). *Stakeholder theory of modern corporation*. Wiley-Blackwell.

Garraway, J., & Bozalek, V. (2019). Theoretical Frameworks and the Extended Curriculum Programme. *Alternation*, *26*(2), 17-32

Gašević, D., Dawson, S. & Siemens, G. (2015). Let's not forget: Learning analytics are about learning. *TechTrends, 59*(1), 64-71.

Gaus, N. (2017). Selecting research approaches and research designs: A reflective essay. *Qualitative Research Journal*, *17*(2), 99-112.

Glass, C. R., Godwin, K. A., & Helms, R. M. (2021). Toward greater inclusion and success. *American Council on Education*.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, *8*(4), 597-607.

Gonzalez, T., De la Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M. (2020). Influence of COVID-19 confinement on students' performance in higher education. *PloS one*, *15*(10), e0239490. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0239490

Government Gazette. (1997). *Higher education act 1997* (IS 515). https://www.gov.za/sites/default/files/gcis_document/201409/a101-97.pdf

Graham, J. R., Grennan, J., Harvey, C. R., & Rajgopal, S. (2022). Corporate culture: Evidence from the field. *Journal of Financial Economics*, *146*(2), 552-593.

Granbom, M., & Granbom, M. (2019). Students' explanation: Wider variety of teaching methods increases motivation and give higher results in biology. *Nordic Studies in Science Education*, *15*(2), 193-205.

Greenstein, C., & Mosley, L. (2020). When talk isn't cheap: Opportunities and challenges in interview research. *The SAGE Handbook of Research Methods in Political Science and International Relations*, 1167-1189.

Grover, M., Kemp M. (2023, September 20). *The heart of smarter decision-making: Intentionality and discipline. https://action.deloitte.com/insight/3561/the-heart-of-smarter-decision-making-intentionality-and-discipline*

Guba, E. G., & Lincoln, Y. S. (1994). *Competing paradigms in qualitative research*. (1st ed.). *Handbook of qualitative research.* Sage. https://miguelangelmartinez.net/IMG/pdf/1994_Guba_Lincoln_Paradigms_Quali_Research_chapter.pdf

Gunawan, J. (2015). Ensuring trustworthiness in qualitative research. *Belitung Nursing Journal*, *1*(1), 10-11. https://www.belitungraya.org/BRP/index.php/bnj/article/download/4/9?__cf_chl_tk=m14.oyhdeouQswHzVLdtu4yJpwaKzjSp.Q2NJm5sAaU-1733050517-1.0.1.1-cEfcHbTMZWn0OrHOt41_k2_M7j4WexrCztnNKjA0AHs

Haataja, D. (2020). *Stakeholder Theory: The New Story of Business?* Wiley.

Hammarberg, K., Kirkman, M., & De Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human Reproduction*, *31*(3), 498-501.

Hancock, D. R., Algozzine, B., & Lim, J. H. (2021). Doing case study research: A practical guide for beginning researchers. *Teachers College Press, 11*(9), 116-118.

Hansson, S. O. (2010). Risk: objective or subjective, facts or values. *Journal of Risk Research*, *13*(2), 231-238.

Harrison, H., Birks, M., Franklin, R., & Mills, J. (2017, January). Case study research: Foundations and methodological orientations. In *Forum qualitative Sozialforschung/Forum: Qualitative Social Research, 18*(1).

Harrison, R. L., Reilly, T. M., & Creswell, J. W. (2020). Methodological rigor in mixed methods: An application in management studies. *Journal of Mixed Methods Research*, *14*(4), 473-495.

Hart-Baldridge, E. (2020). Faculty advisor perspectives of academic advising. *NACADA Journal*, *40*(1), 10-22.

Hassan, E. M. G. (2023). Addressing academic challenges: A quasi-experimental study on the effect of remedial exam strategy for nursing students with low academic performance. *Belitung Nursing Journal*, *9*(4), 369-375

Hassani, B., & Hassani, B. K. (2016). *Scenario analysis in risk management*. Springer International Publishing Switzerland.

Hays, J., & Clements, M. (2011). Supervision in work experience for learning programs. Paper presented at the 17th World Conference on Cooperative and Work-Integrated Education (WACE), Historic Global Challenges, Philadelphia, PA. Retrieved from http://www.waceinc.org/ philly2011/conference_proceedings/Refereed%20Papers/Australia/JAYHAY~1.PDF

He, S., Kempe, K., Tomiki, Y., Nishizuka, M., Suzuki, T., Dambara, T., & Okada, T. (2015). Correlations between entrance examination scores and academic performance following admission. *Juntendo Medical Journal*, *61*(2), 142-148. Correlations Between Entrance Examination Scores and Academic Performance Following Admission (jst.go.jp)

Heimerl, F., Lohmann, S., Lange, S., & Ertl, T. (2014, January). Word cloud explorer: Text analytics based on word clouds. In *2014 47th Hawaii international conference on system sciences* (pp. 1833-1842). IEEE.

Henning, E., Van Rensburg, W. and Smit, B. (2004). *Finding Your Way in Qualitative Research.* Van Schaik. https://www.vanschaik.com/book/4e95a4da57aca/

Hermanto, Y. B., & Srimulyani, V. A. (2021). The challenges of online learning during the covid-19 pandemic. *Jurnal Pendidikan Dan Pengajaran*, *54*(1), 46-57.

Hevel, Michael S., Georgianna L. Martin, Kathleen M. Goodman, and Ernest T. Pascarella. (2018). An exploratory study of institutional characteristics, fraternity and sorority membership, and socially responsible leadership. *College Student Affairs Journal,* 36(2), 155-170. https://muse.jhu.edu/pub/288/article/707279/summary

HHDNP, O. (2020). Influence of lecturers' competence on students' satisfaction of lecturing: Evidence for mediating role of lecturing behaviour. *Universal Journal of Educational Research*, *8*(4), 1167-1179.

Hillson, D., & Simon, P. (2020). *Practical project risk management: The ATOM methodology*. Berrett-Koehler Publishers.

Hlatshwayo, M. (2022). Online learning during the South African COVID-19 lockdown: University students left to their own devices. *Education as Change*, *26*(1), 1-23.

Hlosta, M., Zdrahal, Z., & Zendulka, J. (2017, March). Ouroboros: early identification of at-risk students without models based on legacy data. In *Proceedings of the seventh international learning analytics & knowledge conference* (pp. 6-15).

Hobson, S. M., & Talbot, D. M. (2001). Understanding student evaluations: What all faculty should know. *College Teaching*, *49*(1), 26-31.

Holton, G. A. (2004). Defining risk. *Financial Analysts Journal*, *60*(6), 19-25.

Hopkin, P. (2018). *Fundamentals of risk management: understanding, evaluating and implementing effective risk management*. Kogan Page Publishers. https://books.google.co.za/books?hl=en&lr=&id=bzFiDwAAQBAJ&oi=fnd&pg=PP1&dq=hopkin+risk+management&ots=5SxTDN-9E-&sig=xyCehwLsHFLRl9Q_fnTImpYRve0&redir_esc=y#v=onepage&q=hopkin%20risk%20management&f=false

Hornsby, D. J., & Osman, R. (2014). Massification in higher education: Large classes and student learning. *Higher Education*, *67* (9), 711-719.

Hoyt, J. E. (2023). Student connections: The critical role of student affairs and academic support services in retention efforts. *Journal of College Student Retention: Research, Theory & Practice*, *25*(3), 480-491.

Hubbard, D. W. (2020). *The failure of risk management: Why it's broken and how to fix it*. John Wiley & Sons.

Huber, S. G., & Helm, C. (2020). COVID-19 and schooling: evaluation, assessment and accountability in times of crises—reacting quickly to explore key

issues for policy, practice and research with the school barometer. *Educational Assessment, Evaluation and Accountability*, *32*(2), 237-270.

Hunziker, S., & Blankenagel, M. (2021). Research Design in Business and Management. *Wiesbaden: SpringerGabler*, *1*.

Hutchinson, D., & Chyung, S. Y. (2023). Evidence-based survey design: adding “moderately” or “somewhat” to likert scale options agree and disagree to get interval-like data. *Performance Improvement*, *62*(1), 17-24.

Hwabamungu, B. (2014). The influence of stakeholder relations on the implementation of information systems strategy in public hospitals in South Africa: An activity theory perspective. Open access UCT.

Ideas42. (2016). Nudging for success: Using behavioural science to improve the postsecondary student journey, *13*(4), 37-48

Ikpesu, O., & Oghenevweta, P. (2021). Tutorial Class Size and Students’ Academic Achievement in a Nigerian University. *Journal of Education Research. 21*(8), 89-104.

In, J., & Lee, S. (2017). Statistical data presentation. *Korean Journal of Anaesthesiology*, *70*(3), 267-276.

Institute for Risk Management South Africa. (2012, November 13). *Enterprise risk management.*

Institute of Directors, South Africa. (1994). King I: Report on corporate governance in South Africa, 2016. South Africa. https://www.iodsa.co.za/page/king-I

Institute of Directors, South Africa. (2004). King II: Report on corporate governance in South Africa, 2016. South Africa. https://www.iodsa.co.za/page/king-II

Institute of Directors, South Africa. (2009). King III: Report on corporate governance in South Africa, 2016. South Africa. https://www.iodsa.co.za/page/king-III

Institute of Directors, South Africa. (2009). King III: Report on corporate governance in South Africa, 2016. South Africa. https://www.iodsa.co.za/page/king-III

International Organisation for Standardization. (2018, August 27). *The risk management process. https://www.ioe-emp.org/international-organisations/international-organization-for-standardization#:~:text=What%20is%20ISO%3F,since%20its%20foundation%20in%201946.*

Irtyshcheva, I., Pavlenko, O., Boiko, Y., Stehnei, M., Kramarenko, I., Hryshyna, N., & Ishchenko, O. (2022). Evaluation of efficiency of regional public governance in

the context of achieving goals of sustainable development. *Management Theory and Studies for Rural Business and Infrastructure Development*, *44*(4), 497-505.

Ivankova, N. V., Creswell, J. W., & Clark, V. L. P. (2007). *Planning a research proposal.* Maree, K.

Izumi, T., Sukhwani, V., Surjan, A., & Shaw, R. (2021). Managing and responding to pandemics in higher educational institutions: initial learning from COVID-19. *International Journal of Disaster Resilience in the Built Environment*, *12*(1), 51-66.

Jacobs, M. (2010). *A framework for the placement of university students in science programmes* (Doctoral dissertation, University of the Free State). https://scholar.ufs.ac.za/server/api/core/bitstreams/1fee55d0-50fa-4918-ac78-c4721b02b76f/content

Jacobs, M., De Bruin, G. P., Van Tonder, S. P., & Viljoen, M. (2015). Articulation in Science programmes: A placement strategy to enhance student success. *South African Journal of Higher Education*, *29*(1), 60-78. https://journals.co.za/doi/pdf/10.10520/EJC172798

Jadeja, M., & Shah, K. (2015, January). Tree-Map: A Visualization Tool for Large Data. In *GSB@ SIGIR* (pp. 9-13).

Jadhavar, P. D. S. (2023). *Research Methodology*. Success Publication.

Jakhanwal, M. S. (2021). Professional and Communication Skills for Teachers.

Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy*, *5*(4), 87.

Jain, C., Prasad, N., Jain, C., & Prasad, N. (2018). Understanding factors affecting student outcomes and learning behaviour. *Quality of Secondary Education in India: Concepts, Indicators, and Measurement*, 25(9), 163-187.

Jandrić, P. (2020). The postdigital challenge of pandemic education. *Journal of Contemporary Educational Studies*, *71*(4), 176-189. file:///C:/Users/rajeshr/Downloads/1101804.04-2020_the-postdigital-challenge-of-pandemic-education%20(1).pdf

Jansen, J. D. (2023). *Corrupted: A study of chronic dysfunction in South African universities*. Wits University Press.

Jansen, J., & De Villiers, C. (2016). Determinants of student performance in an accounting degree programme. *South African Journal of Accounting Research*, *30*(1), 1-28. https://www.tandfonline.com/doi/pdf/10.1080/10291954.2015.1019223?casa_token=AbWZshHePHwAAAAA:ugnRF76vWswnZCKPSxudFmIaZWfS_fijOyY7Fiha6LNfYNnfjKHhqv-PkXsrV-JYntpgv750wbP8

Jogulu, U. D., & Pansiri, J. (2011). Mixed methods: A research design for management doctoral dissertations. *Management Research Review*, *34*(6), 687-701.
Johal, R. (2019). How are issues if risk understood and responded to within mental heath services? What contribution can clinical psychologists make to a reconsideration of these ideas and practices? *Towards A Systemic Understanding Of Honour-Based Violence: A Qualitative Study With South Asian Women In Britain.*

John, V. (2013, May 17). *Dropout rate points to lack of support*. *Mail&Guardian.* https://mg.co.za/article/2013-05-17-dropout-rate-points-to-lack-of-support/
Institute on Governance. (2023 May 30). *Risk Governance. https://iog.ca/*

Johnson, R. (2000). The authority of the student evaluation questionnaire. *Teaching in Higher Education*, *5*(4), 419-434.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26.

Johnson, U. (2017). *Success or failure? Student experiences of the Extended Curriculum Programme (ECP) in the College of Humanities* (Doctoral dissertation, PhD Thesis. Durban: University of Kwa Zulu-Natal).

Johnston, M. P. (2014). Secondary data analysis: A method of which the time has come. *Qualitative and Quantitative Methods in Libraries*, *3*(3), 619-626.

Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert scale: Explored and explained. *British Journal of Applied Science & Technology*, *7*(4), 396-403.

Judd, C. M., Westfall, J., & Kenny, D. A. (2017). Experiments with more than one random factor: Designs, analytic models, and statistical power. *Annual Review of Psychology*, *68*(1), 601-625. https://www.annualreviews.org/content/journals/10.1146/annurev-psych-122414-033702

International Federation of Accountants. (2024, 21 November). *Mervyn King.* https://www.ifac.org/who-we-are/mervyn-king

Kaburise, P. (2013). Why has widening access to tertiary, in South Africa, not resulted in success? *Mediterranean Journal of Social Sciences*, *5*(20), 1309-15.

Kalia, A., & Gill, S. (2023). Corporate governance and risk management: a systematic review and synthesis for future research. *Journal of Advances in Management Research*, *20*(3), 409-461.

Kana, S. P. (2020). Corporate governance practice in the context of the political situation in South Africa over the last 25 years. *Journal of Global Responsibility*, *11*(2), 127-137. https://www.emerald.com/insight/content/doi/10.1108/jgr-10-2019-0100/full/pdf?casa_token=vkB6S6DoSyAAAAAA%3Avh23dqtl36mSx2D_HNAn5rc

5hu_LrMW2MrF11YPRuewskcgLHFlOnAF8SetmkuONK-pIHW72KspUyLOavL0HNoEPVttDDRkgq4qCyODbwVuIzdeVQKl9Pw

Karakose, T. (2021). Emergency remote teaching due to COVID-19 pandemic and potential risks for socioeconomically disadvantaged students in higher education. *Educational Process: International Journal (EDUPIJ)*, *10*(3), 53-61.

Kaur, S. (2020). Teaching And Work Ethics. *New Horizons in Commerce, IT & Social Sciences*, *166*(3), 234-248

Kaur, P., Stoltzfus, J., & Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*, *4*(1), 60. Descriptive statistics : International Journal of Academic Medicine (lww.com)

Kemper, L., Vorhoff, G., & Wigger, B. U. (2020). Predicting student dropout: A machine learning approach. *European Journal of Higher Education*, *10*(1), 28-47.

Keping, Y. (2018). Governance and good governance: A new framework for political analysis. *Fudan Journal of the Humanities and Social Sciences*, *11*, 1-8.

Kerlinger, F. N., Lee, H. B., & Bhanthumnavin, D. (2000). Foundations of behavioral research: The most sustainable popular textbook by Kerlinger & Lee (2000). *Journal of Social Development, 13*(2), 131-144.

Khalid, F. M., Rauf, F. H. A., Fauzi, M. A. M., Shafiee, M. A., Khan, N. H. H., & Rosmahadir, N. J. (2020). Factors Influencing Business Students' Academic Performance in Accounting. *Journal of Global Business & Management Research*, *12*(4), 120-128.

Khanzode, V. V. (2004). *Research Methodology*. APH Publishing.

Kim, S. C., Jillapali, R., & Boyd, S. (2021). Impacts of peer tutoring on academic performance of first-year baccalaureate nursing students: A quasi-experimental study. *Nurse Education Today*, *96*(3), 104-118.

Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education, 6*(5), 26-41. https://files.eric.ed.gov/fulltext/EJ1154775.pdf

Kivunja, C. (2018). Distinguishing between theory, theoretical framework, and conceptual framework: A systematic review of lessons from the field. *International Journal of Higher Education, 7*(6), 44-53. https://files.eric.ed.gov/fulltext/EJ1198682.pdf

Knight, F. H. (1921). Risk, uncertainty and profit. Hart, Schaffner and Marx. https://noehernandezcortez.wordpress.com/wp-content/uploads/2011/01/risk-uncertainty-and-profit.pdf

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Kozlova, A., & Snegurenko, A. (2019, October). University risk assessment and management system. In *IOP Conference Series: Materials Science and Engineering* (Vol. 666, No. 1, p. 012050). IOP Publishing.

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *The American Journal of Occupational Therapy*, *45*(3), 214-222. Rigor in qualitative research: the assessment of trustworthiness - PubMed (nih.gov)

Kumar, S. (2017). Response Styles of Structured Questions in Business Research. *Asian Review of Social Sciences*, *6*(2), 23-28.

Kusmaryono, I., Wijayanti, D., & Maharani, H. R. (2022). Number of Response Options, Reliability, Validity, and Potential Bias in the Use of the Likert Scale Education and Social Science Research: A Literature Review. *International Journal of Educational Methodology*, *8*(4), 625-637.

Langeni, P. (2018*). The value of corporate governance: A comparison between the perceived value of King III and King II.* [Masters Dissertation, University of Pretoria] https://repository.up.ac.za/bitstream/handle/2263/65491/Langeni_Value_2018.pdf?sequence=1&isAllowed=y

Latif, G., Alghazo, R., Pilotti, M. A., & Brahim, G. B. (2021). Identifying" At-Risk" Students: An AI-based Prediction Approach. *International Journal of Computing and Digital System*, *9*(7), 57-62. Identifying "At-Risk" Students: An AI-based Prediction Approach (uob.edu.bh)

Latif, K. F., Afzal, O., Saqib, A., Sahibzada, U. F., & Alam, W. (2021). Direct and configurational paths of knowledge-oriented leadership, entrepreneurial orientation, and knowledge management processes to project success. *Journal of Intellectual Capital*, *22*(1), 149-170. Direct and configurational paths of knowledge-oriented leadership, entrepreneurial orientation, and knowledge management processes to project success | Emerald Insight

Latip, M. S. A., Newaz, F. T., & Ramasamy, R. (2020). Students' Perception of Lecturers' Competency and the Effect on Institution Loyalty: The Mediating Role of Students' Satisfaction. *Asian Journal of University Education*, *16*(2), 183-195.

Lau, J. W. (2014). Enriching stakeholder theory: Student identity of higher education. *American Journal of Industrial and Business Management*, *4*(12), 762.

Lavhelani, N. P., Ndebele, C., & Ravhuhali, F. (2020). Examining the efficacy of student academic support systems for ‘at risk ’first entering students at a historically disadvantaged South African University. *Interchange*, *51*(6), 137-156.

Layton, D. M. (2015). The role of the tutorial system in enabling students' academic success. *South African Journal of Higher Education*, *29*(4), 198-210.

Le, C., Pisacreta, E. D., Ward, J. D., Margolis, J., & Booth, H. (2020). Policies to Ensure Equitable Access to Well-Resourced Colleges and Universities. *Ithaka S+ R, October*, *1*.

Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications.

Lederer, A. M., Hoban, M. T., Lipson, S. K., Zhou, S., & Eisenberg, D. (2021). More than inconvenienced: The unique needs of US college students during the COVID-19 pandemic. *Health Education & Behavior*, *48*(1), 14-19.

Leedy, P. D., & Ormrod, J. E. (2015). *Practical Research: Planning and Design* (11th ed.). Pearson Education, Inc.

Leibowitz, B., & Bozalek, V. (2014). Access to higher education in South Africa. *Widening Participation and Lifelong Learning*, *16*(1), 91-109.

Leisyte, L., & Westerheijden, D. F. (2014). Stakeholders and quality assurance in higher education. In *Drivers and barriers to achieving quality in higher education* (pp. 83-97). Brill.

Lemmens, J. C., & Henn, M. (2016). *Learning analytics: A South African higher education perspective.* (1st ed.). Institutional research in South African higher education, (231-253).

Lenau, S., Marchetti, S., Mnnich, R., Pratesi, M., Salvati, N., Shlomo, N., & Zhang, L. C. (2021). Methods for sampling and inference with non-probability samples. *Deliverable D11*, *8*.

Leshoro, T. M., & Jacobs, A. (2019). Challenges to admissions in the Extended Curriculum Programme of the Faculty of Business and Management Sciences. *South African Journal of Higher Education*, *33*(1), 173-183.

Letseka, M., & Maile, S. (2008). *High university drop-out rates: A threat to South Africa's future*. Pretoria: Human Sciences Research Council. https://www.researchgate.net/profile/Moeketsi-Letseka/publication/263469375_High_University_Drop-out_Rates_A_Threat_to_South_Africa's_Future_HSRC_Policy_Brief/links/0c96053b02de50f36f000000/High-University-Drop-out-Rates-A-Threat-to-South-Africas-Future-HSRC-Policy-Brief.pdf

Letseka, M. (2009). University drop-out and researching (lifelong) learning and work. *Learning/Work*, *88*.

Lewin, T., & Mawoyo, M. (2014). Student access and success: Issues and interventions in South African universities. Report published by Inyathelo: The South African Institute for Advancement, with the support of The Kresge Foundation.

Lewis, J., Ritchie, J., Ormston, R., & Morrell, G. (2013). 12 Generalising From Qualitative Research. *Qualitative Research Practice: A Guide for Social Science Students and Researchers*, *15*(3), 69-75

Li, I. W., & Carroll, D. R. (2020). Factors influencing dropout and academic performance: an Australian higher education equity perspective. *Journal of Higher Education Policy and Management*, *42*(1), 14-30. Factors influencing dropout and academic performance: an Australian higher education equity perspective | Semantic Scholar

Liando, N. V. (2010). Students' vs teachers' perspectives on best teacher characteristics in EFL classrooms.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

List, J. A. (2020). *Non est disputandum de generalizability? A glimpse into the external validity trial* (No. w27535). National Bureau of Economic Research.

Liu, F., Li, L., Zhang, Y., Ngo, Q. T., & Iqbal, W. (2021). Role of education in poverty reduction: macroeconomic and social determinants form developing economies. *Environmental Science and Pollution Research*, *28*(6), 63163-63177.

Lourens, A., & Bleazard, D. (2016). Applying predictive analytics in identifying students at risk: A case study. *South African Journal of Higher Education*, *30*(2), 129-142. https://journals.co.za/doi/pdf/10.20853/30-2-583

Lourens, M. E. (2016). *Developing an exploratory framework of human capital linked to intellectual capital and knowledge management for a selected university of technology in South Africa: a case study* (Doctoral dissertation).

Lourens, A. (2020). Retention: predicting first-year success at a higher education institution in south Africa. https://www.aair.org.au/app/webroot/media/pdf/AAIR%20Fora/Forum2002/LourensA.pdf

Luckett, K., & Shay, S. (2020). Reframing the curriculum: A transformative approach. *Critical Studies in Education*, *61*(1), 50-65. https://www.tandfonline.com/doi/pdf/10.1080/17508487.2017.1356341?casa_token=VuhQp9Ws5jgAAAAA:KksSOhOrhI628SK_ouYvx0dw_maZ7JbyJsZtJeOPLmUaBvf-e6lqRp_n_oNqcisrXh0c7TgPQX43

Lurvnik, R. (2020). COVID-19 webinar: A new world for teachers, education's frontline workers. https://www.unesco.org/en/articles/covid-19-webinar-new-world-teachers-educations-frontline-workers-covid-19-education-webinar-2

Mabizela, S. E., & Green-Thompson, L. P. (2019). Exploring the association of the National Benchmark Test results with the academic performance of medical students who completed the degree in minimum time. *Journal of Education*, *75(4)*, 44-55.

Mabokela, R. O., & Mlambo, Y. A. (2017). Access and equity and South African higher education: A review of policies after 20 years of democracy. *Comparative Education Review, 61*(4), 780-803.

MacGillivray, H. (2009). Learning support and students studying mathematics and statistics. *International Journal of Mathematical Education in Science and Technology*, *40*(4), 455-472. https://www.tandfonline.com/doi/full/10.1080/00207390802632980?casa_token=96lqCYmDjFEAAAAA%3A1Ty0cZo6gbVQG7AfJE4qU2hCkt-EX8ckluk82-JAFNFQlN-IYUeT56cbVcbbUxnmExF1GAfzPbl5yOs

MacGregor, K. (2014). The massification of higher education in South Africa. *University World News*, *21*.

McKay, V. (2023). Adult basic education and training in South Africa. In *Review of Adult Learning and Literacy, Volume 7* (pp. 285-310). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003417996-9/adult-basic-education-training-south-africa-veronica-mckay

Mahdy, M. A. (2020). The impact of COVID-19 pandemic on the academic performance of veterinary medical students. *Frontiers in veterinary science*, *7*, 594261. https://www.frontiersin.org/journals/veterinary-science/articles/10.3389/fvets.2020.594261/full

Maksy, M. M., & Wagaman, D. D. (2016). Factors associated with student performance in upper level undergraduate accounting courses: An empirical comparative study at commuter and residential schools. *Journal of Applied Business and Economics*, *18*(5), 582-588. https://articlearchives.co/index.php/JABE/article/view/583

Malatji, H., Mbeve, O., & Khosa, T. (2019). From Students' and Tutors' perspectives: A Review of the Residence-Based Sunday Tutorial Programme at The University Of The Witwatersrand, Johannesburg. https://d1wqtxts1xzle7.cloudfront.net/61849808/Technical_Report_-_Tutors_and_Students_Experience20200121-57794-xk6tne-libre.pdf?1579620137=&response-content-disposition=inline%3B+filename%3DFROM_STUDENTS_AND_TUTORS_PERSPECTIVES_A.pdf&Expires=1734032173&Signature=QVQsB9Z7nMHN4fS0MWq9OJybWsLEqSKQNiavQyRQ0DhM33IYVw80bqSV4qS5y07u2E7AX1KaaShx5z0KzLwuGikJ91NNh5oMRsiKlSPOU2~Bmh-fKzj5JFxgT9rEHWmAQj7VWlW1J7~2AoYGSeNC-02iX6uP4w-FdkI4pjiASK72lwYYU67W-B1chrZ2lK2OTbkZjzuMzpWhdTy7UeRUDXLDsSpijmxfawqUpP0VI02jxkw4FlibeV98JTsFoYW6EzebtYchYDFmT6zjD78heoBtWXFQD4O~ySNzGc6tCNw71OVCz2xjDm3roHLaqsxJivYK9AawJJjIEviivz8Pqg__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

Malikovna, K. R. N., Mirsharapovna, S. Z., Shadjalilovna, S. M., & Kakhramonovich, A. A. (2022). Types of Interactive Methods in Teaching English to Students. *Texas Journal of Multidisciplinary Studies*, *14*(4), 1-4.

Maloney, K. (2020). The Effects of Class Size on Student Achievement. Culminating Projects in Teacher Development. 48. https://repository.stcloudstate.edu/ed_etds/48

Maluleka, J. R., & Ngoepe, M. (2018). An analysis of the throughput rate of doctoral students in LIS schools in South Africa, 2005–2015. *Mousaion*, *36*(3), 1-17.

Makibinyane, J. M., & Khumalo, S. S. (2021). Exploring factors that impede student support services and throughput rate: the case of TVET colleges in South Africa. *International Journal of Education Economics and Development*, *12*(4), 397-411. Exploring factors that impede student support services and throughput rate: the case of TVET colleges in South Africa | International Journal of Education Economics and Development (inderscienceonline.com)

Manarbek, G., Zhakupova, G., Kaliyeva, A., & Hezi, H. (2020). The university-industry cooperation: The role of employers in quality assurance of Education. In *E3S web of conferences* (Vol. 159, p. 09010). EDP Sciences.

Mann, C. (2020). Advising by Design: Co-Creating Advising Services with Students for their Success. *Frontiers in Education,* 5(3), 99. https://doi.org/10.3389/feduc.2020.00099.

Mans-Kemp, N., Erasmus, P., & Viviers, S. (2016). Advances in the corporate governance practices of Johannesburg Stock Exchange companies. *Southern African Business Review, 20*(1), 71–93. https://journals.co.za/doi/pdf/10.10520/EJC190169

Maringe, F., & Chiramba, O. (2022). Disruptions in higher education: mitigating issues of access and success in the COVID-19 pandemic. *South African Journal of Higher Education*, *36*(4), 6-20.

Marinoni, G., Van't Land, H., & Jensen, T. (2020). The impact of Covid-19 on higher education around the world. *IAU Global Survey Report*, *23*(1), 1-17.

Marshall, G., & Jonker, L. (2010). An introduction to descriptive statistics: A review and practical guide. *Radiography*, *16*(4), e1-e7.

Marshall, S. J., & Marshall, S. J. (2018). Internal and external stakeholders in higher education. *Shaping the University of the Future: Using technology to catalyse change in university learning and teaching*, 77-102.

Masama, B. T. (2017). *The Utilisation of Enterprise Risk Management in Fast-Food Small, Medium and Micro Enterprises Operating in the Cape Peninsula* (Doctoral dissertation, Cape Peninsula University of Technology).

Masud, T., Ogliari, G., Lunt, E., Blundell, A., Gordon, A. L., Roller-Wirnsberger, R., Wam& Stuck, A. E. (2022). A scoping review of the changing landscape of geriatric medicine in undergraduate medical education: curricula, topics and teaching methods. *European Geriatric Medicine*, *13*(3), 513-528.

Masutha, M., & Motala, S. (2023). Free Yet? Progress, Setbacks, Tensions and the Potential Futures of South Africa's Free Higher Education Policy: A 6 Year "WPR" Critical Review. *South African Journal of Higher Education*, *37*(6), 193-216. https://journals.co.za/doi/pdf/10.20853/37-6-6198

Matsoso, M. L., & Iwu, C. G. (2017). Assessing student performance with the help of tutorials and lectures. *International Journal of Education Economics and Development*, *8*(1), 34-45.

Matsumoto, D., & Juang, L. (1996). Culture and psychology. *Pacific Grove*, 7(2), 266-270.

Mazhar, S. A., Anjum, R., Anwar, A. I., & Khan, A. A. (2021). Methods of data collection: A fundamental tool of research. *Journal of Integrated Community Health (ISSN 2319-9113)*, *10*(1), 6-10.

McCarthy, R. V., McCarthy, M. M., Ceccucci, W., McCarthy, R. V., McCarthy, M. M., & Ceccucci, W. (2022). What do descriptive statistics tell us. *Applying predictive analytics: Finding value in data*, 55-85. What Do Descriptive Statistics Tell Us | SpringerLink

McEwan, B. (2020). Sampling and validity. *Annals of the International Communication Association*, *44*(3), 235-247.

McGregor, S. L. (2017). *Understanding and evaluating research: A critical guide*. Sage Publications.

McHugh, M. L., & Hudson-Barr, D. (2003). Descriptive statistics, part II: Most commonly used descriptive statistics. *Journal for Specialists in Pediatric Nursing*, *8*(3), 111-116.

McKim, C. A. (2017). The value of mixed methods research: A mixed methods study. *Journal of Mixed Methods Research*, *11*(2), 202-222.

Mgutshini, T. (Ed.). (2022). Extended Curriculum Programmes: Challenges and Opportunities.

Mhlanga, D., & Moloi, T. (2020). COVID-19 and the digital transformation of education: What are we learning on 4IR in South Africa? *Education Sciences*, *10*(7), 180-189

Mian, S. H., Salah, B., Ameen, W., Moiduddin, K., & Alkhalefah, H. (2020). Adapting universities for sustainability education in industry 4.0: Channel of challenges and opportunities. *Sustainability*, *12*(15), 61-73. https://www.mdpi.com/2071-1050/12/15/6100

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.

Ministry of Education. (2001). *Draft national plan for higher education in South Africa* (Report 5604). https://www.dhet.gov.za/hed%20policies/national%20plan%20on%20higher%20education.pdf

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, *22*(1), 67-72.

Mlambo, V. (2011). An analysis of some factors affecting student academic performance in an introductory biochemistry course at the University of the West Indies. *The Caribbean Teaching Scholar*, *1*(2). 111-133

Mlambo, V. H., & Mpanza, S. (2024). Current challenges in South Africa's in Higher education sector: A literature review. *Alustath Journal For Human And Social Sciences*, *63*(3), 22-40. https://alustath.uobaghdad.edu.iq/index.php/UJIRCO/article/view/2261

Mohamedbhai, G. (2014). Massification in higher education institutions in Africa: Causes, consequences and responses. *International Journal of African Higher Education*, *1*(1). https://ejournals.bc.edu/index.php/ijahe/article/view/5644

Moloi, T. (2016). Exploring risks identified, managed and disclosed by South Africa's Public Higher Education Institutions (HEIS). *Journal of Accounting and Management*, *6*(2), 55-70.

Monday, T. U. (2020). Impacts of interview as research instrument of data collection in social sciences. *Journal of Digital Art & Humanities*, *1*(1), 15-24.

Moodley, P., & Singh, R. J. (2015). Addressing student dropout rates at South African universities. *Alternation (Durban)*, *16*(4), 38-48.

Mosen-Lowe, L. A. J., Vidovich, L., & Chapman, A. (2009). Students 'at-risk' policy: Competing social and economic discourses. *Journal of Education Policy*, *24*(4), 461-476.

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, *24*(1), 9-18.

Mu, L., & Fosnacht, K. (2019). Effective advising: How academic advising influences student learning outcomes in different institutional contexts. *The Review of Higher Education*, *42*(4), 1283-1307.

Mujiburrahman, M., Zulfatmi, Z., Sabirin, S., Khatimah, H. K. H., & Ismail, F. H. (2022). Reformulation of competency development of lecturers of state Islamic religious universities in Indonesia after covid-19. *Asian Journal of University Education*, *18*(1), 15-33.

Mulgan, R. (2000). ‘Accountability’: an ever-expanding concept? *Public Administration*, *78*(3), 555-573.

Müller, A. M., Goh, C., Lim, L. Z., & Gao, X. (2021). Covid-19 emergency elearning and beyond: Experiences and perspectives of university educators. *Education Sciences*, *11*(1), 19. https://www.mdpi.com/2227-7102/11/1/19

Mutakwa, D. T., and D. Mhakure. (2019). Tracking students’ performance in higher education: the transition from national benchmark tests to quantitative literacy intervention course. *South African Journal of Higher Education, 33*(4), 203-218.

Noui, R. (2020). Higher education between massification and quality. *Higher Education Evaluation and Development*, *14*(2), 93-103.

Nandy, M., Lodh, S., & Tang, A. (2021). Lessons from Covid-19 and a resilience model for higher education. *Industry and Higher Education*, *35*(1), 3-9.

National Commission on Higher Education. (1996). *An overview of a new policy framework higher education transformation.* higher_education_transformation.pdf (ecsecc.org)

National Planning Commission. (2010). *National development plan.* (Report 3768). https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf

Nel, B. P. (2020). Implications of the quantitative literacies test results of the National Benchmark Test Project (NBTP) for teachers. *South African Journal of Education*, *40*(1), 1-8. https://journals.co.za/doi/abs/10.15700/saje.v40n1a1792

Ngcobo, X. M., Marimuthu, F., & Stainbank, L. J. (2024). Revenue sourcing for the financial sustainability of a university of technology: an exploratory study. *Cogent Education*, *11*(1), 2295173.

Nieuwenhuis, J., & Sehoole, C. (2013). The quest for access, equity and social justice in higher education in South Africa. In *Fairness in Access to Higher Education in a Global Perspective* (pp. 189-202). Brill.

Nixon, J. (2020). Higher education and the public good. In *The International Encyclopedia of Higher Education Systems and Institutions* (pp. 637-643). Dordrecht: Springer Netherlands.

Netswera, F. G., & Mathabe, N. (2006). A pervasive apartheid? An analysis of changing higher education in South Africa and its relationship with the State. *Journal of Educational Administration and History*, *38*(01), 29-40.

Nnadozie, V., Khumalo, S., Mahadew, A., Mazibuko, P., Rawatlal, R., Mpungose, C., & Nzimande, N. (2023, November). Encouraging Student Academic Performance Using Automated Academic Advising System: A Reflection. In *The 10th Focus Conference (TFC 2023)* (pp. 320-338). Atlantis Press.

Noor, S., Tajik, O., & Golzar, J. (2022). Simple random sampling. *International Journal of Education & Language Studies*, *1*(2), 78-82.

Noori, A. Q., Said, H., Nor, F. M., & Abd Ghani, F. (2020). The relationship between university lecturers' behaviour and students' motivation. *Universal Journal of Educational Research*, *8*(11C), 15-22. https://d1wqtxts1xzle7.cloudfront.net/80728739/UJERC3-19591543-libre.pdf?1644776051=&response-content-disposition=inline%3B+filename%3DThe_Relationship_between_University_Lect.pdf&Expires=1734030407&Signature=KPprlwa~3iHuZRWrryGf1Ae2KElr88TujswWWTylhvhx2Y8fY~I7q4upGyTNmmwhIVxR5~6eFG401BX4qra1Y~EuQykrir0OkTpwsE9RdPcgE8p2Po0tcCKqmnlEPkxBeuWV26Z0~Tga272lwCvCcQ6OSraRY612-C8R-s2vGyzW3ZVC0dZgR~NWwinXWtXUnWprTcjGBsWGwmhuwNbstfMw81yIVRc8S-kjr-4kW~uAvoeYoAnstSJ6fRRgc6bY7Hvg7nJ76Nu43RsAwL-mZwpyYdpUdx8-WkdKqYDecxhKULhpNVai3bm12Xbi55nhZcOSolYnMsHg7W0SwbgPgg__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

North Carolina State University. (2022, February 8). *Imagining the unimaginable. https://erm.ncsu.edu/resource-center/imaging-unimaginable-risks/*

Nuris, D. M. R., Nuraini, U., & Nagari, P. M. (2018). Blended learning application in the accounting education: Life-based learning paradigm. *KnE Social Sciences*, 71-78. https://kneopen.com/KnE-Social/article/view/1874/

Nyagope, T. S. (2024). Massification at Higher Education Institutions; Challenges Associated with Teaching Large Classes and How it Impacts the Quality of Teaching and Learning in South Africa. *International Journal of Environmental, Sustainability, and Social Science*, *5*(1), 209-220.

Ogude, N. A., Meyer, I. J., Mwambakana, J., & Mthethwa, N. E. (2019). Can extended curriculum programmes be improved through engagement with students using appreciative inquiry? *South African Journal of Higher Education*, *33*(4), 219-236.

Okai-Ugbaje, S., Ardzejewska, K., & Imran, A. (2020). Readiness, roles, and responsibilities of stakeholders for sustainable mobile learning adoption in higher education. *Education Sciences*, *10*(3), 49.

Olabode, S. O., Olateju, O. I., & Bakare, A. A. (2019). An assessment of the reliability of secondary data in management science research. *International Journal of Business and Management Review*, *7*(3), 27-43.

Olds, B. M., Moskal, B. M., & Miller, R. L. (2005). Assessment in engineering education: Evolution, approaches and future collaborations. *Journal of Engineering Education*, *94*(1), 13-25.

Olssen, M. (2021). Neoliberal competition in higher education today: Research, accountability and impact. In *A normative Foucauldian* (pp. 307-327). Brill.

Omodan, B. I., & Ige, O. A. (2021). University students' perceptions of curriculum content delivery during COVID-19 new normal in South Africa. *Qualitative Research in Education*, *10*(2), 204-227. https://journals.hipatiapress.com/index.php/qre/article/view/7446

Organisation for Economic Co-operation and Development. (2008). Education at a Glance. 41284038.pdf (oecd.org)

Outreville, J. F. (1998). The meaning of risk. In *Theory and Practice of Insurance* (pp. 1-12). Boston, MA: Springer US.

Osanloo, A., & Grant, C. (2016). Understanding, selecting, and integrating theoretical framework in dissertation research: Creating the blueprint for your "house". *Administrative Issues Journal, 4*(2), 764-771. https://dc.swosu.edu/cgi/viewcontent.cgi?article=1096&context=aij

Palaganas, E. C., Sanchez, M. C., Molintas, M. P., & Caricativo, R. D. (2017). Reflexivity in Qualitative Research: A Journey of Learning. *The Qualitative Report*, *22*(2), 426-438. https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=2552&context=tqr

Pandey, P., & Pandey, M. M. (2021). *Research methodology tools and techniques*. Bridge Center.

Pandis, N. (2016). The chi-square test. *American Journal of Orthodontics and Dentofacial Orthopedics*, *150*(5), 898-899. https://www.ajodo.org/article/S0889-5406(16)30449-8/fulltext

Papa, R. (Ed.). (2020). *Handbook on promoting social justice in education*. Dordrecht: Springer.

Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., Purnell, L., & De Colle, S. (2010). Stakeholder theory: The state of the art. *Academy of Management Annals*, *4*(1), 403-445.

Parvaiz, G. S., Mufti, O. and Wahab, M. (2016). Pragmatism for Mixed Method Research at Higher Education Level. *Business & Economic Review, 8*(2), 67-79.

Patton, L. D. (Ed.). (2023). *Culture centers in higher education: Perspectives on identity, theory, and practice*. Taylor & Francis.

Pearse, N. (2019, June). An illustration of deductive analysis in qualitative research. In *18th European conference on research methodology for business and management studies* (p. 264).

Pederson, L. L., Vingilis, E., Wickens, C. M., Koval, J., & Mann, R. E. (2020). Use of secondary data analyses in research: Pros and Cons. *Journal of Addiction Medicine and Therapeutic Science*, *6*(1), 058-060.

Percy, J. P. (1995). The Cadbury report and corporate governance in the UK. *The CPA Journal*, *65*(5), 24. https://d1wqtxts1xzle7.cloudfront.net/56545107/79548-Beyond_Cadbury_Report_Napier_paper.pdf?1526109610=&response-content-disposition=inline%3B+filename%3DThe_Cadbury_Report_1992_Shared_Vision_an.pdf&Expires=1734121455&Signature=PUmRpxDLvH-QEjGde1E2qdnWW~HhAySnQ6IRTMSwFyz4EFLC36MQAge3NvuDzQiJuUe0V77TBqBSUHOq134iZtw-UL1stYOWjNAjwyFryhI8pKgQP4SM8qFLNPyx7OJuDKNEMNKkP8CbthkeydsuThJTLzwRYXYrj6VLABlHJJqs14~r69h7axZv7ItOjbuIOWgfu1eSGCggbAEGZD5n6YJYaLi~yzBU0kGciCmq6NXUbdB~Vsb~GktglhoZxnsMyAaD5M9iAG4rwefPZ5gz5yqGBJGchyOrWQQjx732gBV3LeHRDV2n~z0bZ2i5cyk-nu67maTWM9fdvTa2dXNmyQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

Permana, A., Aima, M., Ariyanto, E., Nurmahdi, A., Sutawidjaya, A., & Endri, E. (2021). The effect of compensation and career development on lecturer job satisfaction. *Accounting*, *7*(6), 1287-1292.

Pervin, N., & Mokhtar, M. (2022). The interpretivist research paradigm: A subjective notion of a social context. *International Journal of Academic Research in Progressive Education and Development*, *11*(2), 419-428.

PECB. (2015, 01, 09). *ISO 31000 Risk management – Principles and guidelines.* https://pecb.com/whitepaper/iso-31000-risk-management--principles-and-guidelines

Peters, W. (2004). Apartheid politics and architecture in South Africa. *Social Identities*, *10*(4), 537-547.

Pietrocola, M., Rodrigues, E., Bercot, F., & Schnorr, S. (2021). Risk society and science education: Lessons from the Covid-19 Pandemic. *Science & Education*, *30*(2), 209-233.

Poalses, J., & Bezuidenhout, A. (2018). Mental health in higher education: A comparative stress risk assessment at an open distance learning university in South Africa. *International Review of Research in Open and Distributed Learning*, *19*(2). https://www.erudit.org/en/journals/irrodl/2018-v19-n2-irrodl03962/1051247ar/abstract/

Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education For The Future*, *8*(1), 133-141.

Polkinghorne, D. E. (1989). Phenomenological research methods. In *Existential-phenomenological perspectives in psychology: Exploring the breadth of human experience* (pp. 41-60). Boston, MA: Springer US.

Power, M., Ashby, S., & Palermo, T. (2013). *Risk culture in financial organisations: A research report*. CARR-Analysis of Risk and Regulation.

Prasetio, A. P., Azis, E., Fadhilah, D. D., & Fauziah, A. F. (2017). Lecturers' professional competency and students' academic performance in Indonesia higher education. *International Journal of Human Resource Studies*, *7*(1), 86-93.

Prasetio, A. P., Yuniarsih, T., & Ahman, E. (2017). Job satisfaction, organizational commitment, and organizational citizenship behaviour in state-owned banking. *Universal Journal of Management*, *5*(1), 32-38.

Prince, R. (2017). The relationship between school-leaving examinations and university entrance assessments: The case of the South African system. *Journal of Education (University of KwaZulu-Natal)*, 18(70), 133-160. https://www.scielo.org.za/scielo.php?pid=S2520-98682017000300007&script=sci_arttext

Purdy, G. (2010). ISO 31000: 2009—setting a new standard for risk management. *Risk Analysis: An International Journal*, *30*(6), 881-886.

Purwanto, A., Pramono, R., Asbari, M., Hyun, C. C., Wijayanti, L. M., & Putri, R. S. (2020). Studi eksploratif dampak pandemi COVID-19 terhadap proses pembelajaran online di sekolah dasar. *EduPsyCouns: Journal of Education, Psychology and Counseling*, *2*(1), 1-12.

Qurotul Aini, Q. A., Mukti Budiarto, M. B., POH Putra, P. O. H., & Untung Rahardja, U. R. (2020). Exploring e-learning challenges during the global COVID-19 pandemic: A review. *Jurnal Sistem Informasi (Journal of Information System)*, *16*(2), 47-65.

Raanan, Y. (2008). Risk management in higher education: do we need it? *Risk Management in Higher Education*, 17(9),1000-1007.

Raaper, R., & Brown, C. (2020). The Covid-19 pandemic and the dissolution of the university campus: Implications for student support practice. *Journal of Professional Capital and Community*, *5*(3/4), 343-349.

Rahman, M. M., Tabash, M. I., Salamzadeh, A., Abduli, S., & Rahaman, M. S. (2022). Sampling techniques (probability) for quantitative social science researchers: a conceptual guideline with examples. *Seeu Review*, *17*(1), 42-51.

Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian journal of psychiatry*, *52*, 102066. https://www.sciencedirect.com/science/article/pii/S1876201820301775

Ramalho, A. (2020). The distinctive stance of the King Reports on corporate governance from a global perspective. *Journal of Global Responsibility*, *11*(2), 173-185.

Ramrathan, L. (2013). Towards a conceptual framework for understanding student dropout from HEIs. *South African Journal of Higher Education*, *27*(1), 209-220.

Ramrathan, L. (2016). Beyond counting the numbers: Shifting higher education transformation into curriculum spaces. *Transformation in Higher Education*, *1*(1), 1-8. https://files.eric.ed.gov/fulltext/EJ1187113.pdf

Ramrathan, L., & Pillay, G. (2015). Re-imagining and expanding the discourse of student access, throughput and drop-out within the South African higher education context. *Alternation Special Edition*, *17*(1), 6-27.

Ran, F. X., & Xu, D. (2019). Does contractual form matter? The impact of different types of non-tenure-track faculty on college students' academic outcomes. *Journal of Human Resources*, *54*(4), 1081-1120.

Rasid, S. Z. A., Bakar, B. A., Rizal, A. M., & Baskaran, S. (2019). Risk management practices to strengthen public sector accountability. *Asian Journal of Business and Accounting*, *12*(1), 1-40.

Reiter, B. (2017). Theory and methodology of exploratory social science research. Wiley and Sons.

Reddy, T. (2004). Higher education and social transformation: South Africa case study. Wiley.

Renn, O., Klinke, A., & Van Asselt, M. (2011). Coping with complexity, uncertainty and ambiguity in risk governance: a synthesis. *Ambio*, *40*, 231-246. https://link.springer.com/article/10.1007/s13280-010-0134-0

Rensburg, I. (2020). *Serving Higher Purposes: University Mergers in Post-Apartheid South Africa* (Vol. 2). African Sun Media.

Ring, P. J., Bryce, C., McKinney, R., & Webb, R. (2016). Taking notice of risk culture–the regulator's approach. *Journal of Risk Research*, *19*(3), 364-387.

Rissanen, A., & Costello, J. M. (2023). The effectiveness of interactive online tutorials in first-year large biology course. *Journal of Applied Research in Higher Education*, *15*(3), 632-649.

Robson, C. (2002). *Real world research* (Vol. 2). Oxford: Blackwell.

Romesburg, C. (2004). *Cluster analysis for researchers*. Lulu. com.

Ross, A., Willson, V. L., Ross, A., & Willson, V. L. (2017). Independent samples T-test. *Basic and advanced statistical tests: Writing results sections and creating tables and figures*, 13-16. https://link.springer.com/chapter/10.1007/978-94-6351-086-8_3

Rose, J., & Johnson, C. W. (2020). Contextualizing reliability and validity in qualitative research: Toward more rigorous and trustworthy qualitative social science in leisure research. *Journal of Leisure Research*, *51*(4), 432-451.

Rossouw, H. (2001). South Africa spends $163-million a year on students who drop out. *Chronicle of Higher Education*, *17(3), 47-62*. Access and quality in South African higher education : the twin challenges of transformation (journals.co.za)

Rowan, L., Bourke, T., L'Estrange, L., Lunn Brownlee, J., Ryan, M., Walker, S., & Churchward, P. (2021). How does initial teacher education research frame the challenge of preparing future teachers for student diversity in schools? A systematic review of literature. *Review of Educational Research*, *91*(1), 112-158. https://journals.sagepub.com/doi/pdf/10.3102/0034654320979171

Ruane, J. M. (2016). *Introducing social research methods: Essentials for getting the edge*. John Wiley & Sons.

Rubel, A., & Jones, K. (2017). Data analytics in higher education: Key concerns and open questions. *U. St. Thomas JL & Pub. Pol'y*, *11*, 25. https://heinonline.org/HOL/LandingPage?handle=hein.journals/tjlpp11&div=4&id=&page=

Russell, M. D. (2020). *Understanding the Academic Help-Seeking Strategies and Experiences of Black First-Generation Engineering Undergrads*. Teachers College, Columbia University.

Russo-Gleicher, R. (2013). Qualitative insights into faculty use of student support services with online students at risk: Implications for student retention. *Journal of Educators Online*, *10*(1), 1-32.

Ryan, M. V., Stratford, J., & Lee, L. (2020). Lending a Helping Hand; Educational Value of a Hand-Drawn Video Tutorial on Embryonic Underpinnings of Gross Anatomy. *The FASEB Journal*, *34*(S1), 1-1. https://faseb.onlinelibrary.wiley.com/doi/abs/10.1096/fasebj.2020.34.s1.06675

Saeidi, P., Saeidi, S. P., Gutierrez, L., Streimikiene, D., Alrasheedi, M., Saeidi, S. P., & Mardani, A. (2021). The influence of enterprise risk management on firm performance with the moderating effect of intellectual capital dimensions. *Economic Research-Ekonomska Istraživanja*, *34*(1), 122-151.

Şahin, M. D., & Ozturk, G. (2019). Mixed method research: Theoretical foundations, designs and its use in educational research. *International Journal of Contemporary Educational Research*, *6*(2), 301-310.

Salari, N., Hosseinian-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., ... & Khaledi-Paveh, B. (2020). Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Globalization and Health*, *16*, 1-11. https://link.springer.com/article/10.1186/s12992-020-00589-w

Sale, J. E., Lohfeld, L. H., & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: Implications for mixed-methods research. *Quality and Quantity*, *36(3)*, 43-53.

Sarid, M., Meltzer, Y., & Raveh, M. (2020). Academic achievements of college graduates with learning disabilities vis-a-vis admission criteria and academic support. *Journal of Learning Disabilities*, *53*(1), 60-74.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education. https://toc.library.ethz.ch/objects/pdf_ead50/4/E57_7072090_TB-Index_005013522.pdf

Saunders, M. N., & Tosey, P. C. (2013). The layers of research design. *Rapport*, (Winter), 58-59.

Sauro, J. (2015). *Three ways to combine quantitative and qualitative research.* Wiley Blackwell

Savin-Baden, M., & Major, C. (2023). *Qualitative research: The essential guide to theory and practice*. Routledge.

Schofer, E., Ramirez, F. O., & Meyer, J. W. (2021). The societal consequences of higher education. *Sociology of Education*, *94*(1), 1-19. https://journals.sagepub.com/doi/abs/10.1177/0038040720942912?journalCode=soea

Schoonenboom, J., & Johnson, R. B. (2017). How to construct a mixed methods research design. *Kolner Zeitschrift fur Soziologie und Sozialpsychologie*, *69* (Suppl 2), 107.

Scoones, I. (2019). What is uncertainty and why does it matter. *Brighton: ESRC STEPS (Social, Technological and Environmental Pathways to Sustainability) Centre-University of Brighton*.

Seekings, J. (2020). The National Party and the ideology of welfare in South Africa under apartheid. *Journal of Southern African Studies*, *46*(6), 1145-1162.

Smith, D. G. (2020). *Diversity's promise for higher education: Making it work*. JHU Press.

Segabutla, M. H., & Evans, R. (2019). Lack of lecturer clarity during instruction: Possible reason for poor throughput? *South African Journal of Higher Education*, *33*(3), 115-131.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

Shenoy, A., & Petersen, K. H. (2020). Peer tutoring in preclinical medical education: a review of the literature. *Medical Science Educator*, *30*(1), 537-544.

Serra, R., Martinez, C., Vertegaal, C. J., Sundaramoorthy, P., & Bentum, M. J. (2023). Using student-led tutorials to improve student performance in challenging courses. *IEEE Transactions on Education*, 14(5), 889-896

Severson, H. H., Walker, H. M., Hope-Doolittle, J., Kratochwill, T. R., & Gresham, F. M. (2007). Proactive, early screening to detect behaviorally at-risk students: Issues, approaches, emerging innovations, and professional practices. *Journal of School Psychology*, *45*(2), 193-223.

Shamoo, A. E., & Resnik, D. B. (2009). *Responsible conduct of research*. Oxford University Press.

Shereen, M. A., Khan, S., Kazmi, A., Bashir, N., & Siddique, R. (2020). COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses. *Journal of Advanced Research*, *24*, 91-98.

Sherwani, K. H., & Singh, U. S. (2015). Students Perception on Lecturer Evaluation in Higher Education. *International Journal of Social Sciences & Educational Studies*, *2*(1), 49.

Shore, C., & Wright, S. (2003). Coercive accountability: the rise of audit culture in higher education. In *Audit cultures* (pp. 69-101). Routledge.

Sibiya, M. N., & Mahlanze, H. T. (2019). Experiences of undergraduate nursing students in an extended curriculum programme at a South African University of Technology. *African Journal for Physical Activity and Health Sciences (AJPHES)*, *25*(4), 508-521.

Siedlecki, S. L. (2020). Understanding descriptive research designs and methods. *Clinical Nurse Specialist*, *34*(1), 8-12.

Siegrist, M., & Árvai, J. (2020). Risk perception: Reflections on 40 years of research. *Risk analysis*, *40*(S1), 2191-2206.

Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and education. *EDUCAUSE Review*, *46*(5), 30-41

Simamora, R. M. (2020). The Challenges of online learning during the COVID-19 pandemic: An essay analysis of performing arts education students. *Studies in Learning and Teaching*, *1*(2), 86-103.

Sityata, I., Botha, L., and Dubihlela. J. (2021). Risk management practices by South African Universities: An annual report disclosure analysis. *Journal of Risk and Financial Management, 14*(5), 195.

Slabbert, R., & Friedrich-Nel, H. (2015). Extended curriculum programme evolution: a road map to academic success? *South African Journal of Higher Education*, *29*(1), 45-59.

Slabbert, R., & du Plessis, J. (2021). Quality assurance of peer-assisted learning by measuring academic performance of health sciences extended curriculum students. *Perspectives in Education*, *39*(2), 95-112. https://journals.co.za/doi/abs/10.18820/2519593X/pie.v39.i2.8

Spaull, N. (2013). South Africa's education crisis: The quality of education in South Africa 1994-2011. *Johannesburg: Centre for Development and Enterprise*, *21*(1), 1-65. https://fasmed.aimssec.ac.za/wp-content/uploads/2015/10/spaull-2013-cde-report-south-africas-education-crisis.pdf

Spencer-Oatey, H. (Ed.). (2008). *Culturally speaking second edition: Culture, communication and politeness theory*. Bloomsbury Publishing.

Spencer-Oatey, H., & Franklin, P. (2012). What is culture. *A compilation of quotations. GlobalPAD Core Concepts*, *1*(22), 1-21.

Soiferman, L. K. (2010). Compare and Contrast Inductive and Deductive Research Approaches. Wiley.

Sok-Foon, Y., Sze-Yin, J. H., Yin-Fah, B. C., & Yin, B. C. (2012). Student evaluation of lecturer performance among private university students. *Canadian Social Science*, *8*(4), 238-243. https://eudl.eu/pdf/10.4108/eai.11-12-2019.2302088

Soudien, C., Reddy, V., & Harvey, J. (2022). The impact of COVID-19 on a fragile education system: The case of South Africa. *Primary and secondary education during COVID-19: Disruptions to educational opportunity during a pandemic*, 303-325.

Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, *1*(1), 64-85.

Spaull, N., & Taylor, S. (2015). Access to what? Creating a composite measure of educational quantity and educational quality for 11 African countries. *Comparative Education Review*, *59*(1), 133-165. https://www.jstor.org/stable/pdf/10.1086/679295.pdf?casa_token=GIdRtxUBKuEAAAAA:zq1rAKaiy9gtQmqjSe2N81dl_mGvzc1ZgkS3hK76eJlqLiSYBKJsm26WJl46hS0AsRAnwqaGsoyoULpKko3zjb0wcpgQ19Dym01vE2-j9Up8QYgrVZk

Stadlman, M., Salili, S. M., Borgaonkar, A. D., & Miri, A. K. (2022). Artificial Intelligence Based Model for Prediction of Students' Performance: A Case Study of Synchronous Online Courses During the COVID-19 Pandemic. *Journal of STEM Education: Innovations and Research*, *23*(2), 39-46.

Stafford, J. L., Leon-Castelao, E., Klein Ikkink, A. J., Qvindesland, S. A., Garcia-Font, M., Szyld, D., & Diaz-Navarro, C. (2021). Clinical debriefing during the COVID-19 pandemic: hurdles and opportunities for healthcare teams. *Advances in Simulation*, *6*(1), 32. https://link.springer.com/article/10.1186/s41077-021-00182-0

Stăiculescu, C., & Ramona, R. N. E. (2018). University dropout. Causes and solution. *Mental Health: Global Challenges Journal*, *1*(1), 71-75. https://www.mhgcj.org/index.php/MHGCJ/article/view/29

Stevens, L., & Wrenn, C. (2013). Exploratory (qualitative) research. *Concise encyclopaedia of church and religious organization marketing*, *53*.

Steyn, A. G. W., & De Villiers, A. P. (2007). Public funding of higher education in South Africa by means of formulae. *Council on Higher Education (Ed). Review of Higher Education in South Africa. Selected Themes. Pretoria: Council on Higher Education*, 11-51.

Strijker, D., Bosworth, G., & Bouter, G. (2020). Research methods in rural studies: Qualitative, quantitative and mixed methods. *Journal of Rural Studies*, *78(30)*, 262-270.

Styger, A. (2014). *Evaluating the South African higher education government funding framework* (Doctoral dissertation). University of North West.

Styger, A., Van Vuuren, G. W., Heymans, A. (2015). *Case study of postgraduate student dropout rate at South African universities*. *International Business and Economics Research Journal, 14(1),* 1-14. https://repository.nwu.ac.za/bitstream/handle/10394/20737/2015Case_Study.pdf?sequence=1

Subedi, S., Nayaju, S., Subedi, S., Shah, S. K., & Shah, J. M. (2020). Impact of E-learning during COVID-19 pandemic among nursing students and teachers of Nepal. *International Journal of Science and Healthcare Research*, *5*(3), 68-76. https://d1wqtxts1xzle7.cloudfront.net/64126179/IJSHR0012-libre.pdf?1596888708=&response-content-disposition=inline%3B+filename%3DImpact_of_E_learning_during_COVID_19_Pan.pdf&Expires=1734077525&Signature=ar1qymGHlz9aiBMlCLg8jLGDcB7BKhbVoz9i~u7oPe7xfABcv7mwVZslNENjzAsAYJw5ANiFWGNO4csbSvGlwEfFmYr8XDiP-U284Y8V9KSoSu7Kgu7m4Azp-s6codiP1778Kt3wv8rXySWvqZk3A8JXUU8pfHNMxUVFPKhplRFZysqHzArW4zo6fbkcZ3cCbnCnG0kC6Rlf~yi05l37ZTqmcCI1R37ta8FuVbSzQWYk09PPk34lTsk0wKTyV753cX28C5ZSj5tN~FXsU46tYs26Dh9nqIw87TzKMH3xaeNYidoV7CmDPv0tEviFTCnHCGpNyh6PC~lwMP1NhQ97KA__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

Suleman, Q., Syed, M. A., Shehzad, S., Hussain, I., Khattak, A. Z., Khan, I. U., ... & Khan, I. (2021). Leadership empowering behaviour as a predictor of employees' psychological well-being: Evidence from a cross-sectional study among secondary school teachers in Kohat Division, Pakistan. *Plos One*, *16*(7), 265-274, e0254576.

Sum, R. M., & Saad, Z. M. (2017, December). Risk management in universities. In *3rd International Conference on Qalb-Guided Leadership in Higher Education Institutions (iQALB 2017)* (pp. 128-142).

Surbhi, S. (2016). Difference between probability and non-probability sampling. *Retrieved from Key Differences website: http://keydifferences. com/differencs-between-probability-and-non-probabilitysampling. html# KeyDifferences*.

Statistics South Africa. (2019). *Higher education and skills in South Africa, 2017* (Report 92-01-05). http://www.statssa.gov.za/publications/Report-92-01-05/Report-92-01-052017.pdf

Statistics South Africa. (2019). *Financial Statistics for Higher Education Institutions.* P910312019.pdf (statssa.gov.za)

Statistics South Africa. (2021). *Financial Statistics for Higher Education Institutions.* P910312019.pdf (statssa.gov.za)

Swedberg, R. (2020). Exploratory research. *The production of knowledge: Enhancing progress in social science*, *2*(1), 17-41.

Taherdoost, H. (2022). What are different research approaches? Comprehensive Review of Qualitative, quantitative, and mixed method research, their applications, types, and limitations. *Journal of Management Science & Engineering Research*, *5*(1), 53-63.

Takahashi, A. R. W., & Araujo, L. (2020). Case study research: opening up research opportunities. *RAUSP Management Journal*, *55*(1), 100-111.

Tashakkori, A., & Teddlie, C. (2003). Issues and dilemmas in teaching research methods courses in social and behavioural sciences: US perspective. *International Journal of Social Research Methodology*, *6*(1), 61-77.

Taylor, N. (2011). Priorities for addressing South Africa's education and training crisis. *Review commissioned by the National Planning Commission. Johannesburg: JET Education Services*. file:///C:/Users/rajeshr/Downloads/Taylor%20NPC%20Synthesis%20report%20Nov%202011%20(2).pdf

Terenzini, P. T., & Pascarella, E. T. (1978). The relation of students' precollege characteristics and freshman year experience to voluntary attrition. *Research in Higher Education*, *9*, 347-366.

The Constitution of the Republic of South Africa. (1996). saconstitution-web-eng.pdf (justice.gov.za)

Terry, C. (2011, October 3). *Manchester United: 10 Reasons They Are Best Club in the World*. Bleacher Report. https://bleacherreport.com/articles/876431-manchester-united-10-reasons-they-are-best-club-in-the-world

Thanh, N. C., & Thanh, T. T. (2015). The interconnection between interpretivist paradigm and qualitative methods in education. *American Journal of Educational Science*, *1*(2), 24-27.

The Witness. (2022, June 8). *DUT students in Pietermaritzburg protest against writing physical exams*. https://witness.co.za/news/2022/06/08/dut-students-in-pietermaritzburg-protest-against-writing-physical-exams-20220608/

Thomas, D. R. (2003). A general inductive approach for qualitative data analysis. Wiley.

Thompson, B., & Mazer, J. P. (2009). College student ratings of student academic support: Frequency, importance, and modes of communication. *Communication Education*, *58*(3), 433-458.

Thurston, A., Cockerill, M., & Chiang, T. H. (2021). Assessing the differential effects of peer tutoring for tutors and tutees. *Education Sciences*, *11*(3), 97-104.

Tibiletti, V., Marchini, P. L., Furlotti, K., & Medioli, A. (2021). Does corporate governance matter in corporate social responsibility disclosure? Evidence from Italy in the “era of sustainability”. *Corporate Social Responsibility and Environmental Management*, *28*(2), 896-907.

Tierney, W. G. (1992). *Official Encouragement, Institutional Discouragement: Minorities in Academe--The Native American Experience. Interpretive Perspectives on Education and Policy [Series]*. Ablex Publishing Corp.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, *45*(1), 89-125.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition.* Chicago: The University of Chicago Press.

Tinto, V. (1988). Stages of student departure: Reflections on the longitudinal character of student leaving. *The Journal of Higher Education*, *59*(4), 438-455. https://www.tandfonline.com/doi/pdf/10.1080/00221546.1988.11780199

Tinto, V., Goodsell, A, & Russo, P. (1993). Gaining a voice: The impact of collaborative learning on student experience in the first year of college. Unpublished manuscript, Syracuse University.

Tinto, V. (1993). Leaving College: Rethinking the Causes and Cures of Student Attrition. (2nd ed.). Chicago, IL: University of Chicago Press. https://doi.org/10.7208/chicago/9780226922461.001.0001

Tinto, V. (1998, May). Learning communities: Building gateways to student success. In *The National Teaching and Learning Forum* (Vol. 7, No. 4, pp. 1-11). https://www.researchgate.net/profile/Vincent-Tinto/publication/251201522_Learning_Communities_Building_Gateways_to_Student_Success_1/links/571d595f08aee3ddc56ac878/Learning-Communities-Building-Gateways-to-Student-Success-1.pdf

Tinto, V. (2012). Enhancing student success: Taking the classroom success seriously. *Student Success*, *3*(1), 1. 17a437b6af55a7d18fa2bd178c2b5171da71.pdf (semanticscholar.org)

Tinto, V. (2001). Rethinking the first year of college. *Higher Education Monograph Series, Syracuse University*, *9*(2), 1-8.

Tinto, V. (2012). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.

Tinto, V. (2017). Reflections on student persistence. *Student Success*, *8*(2), 1-8.

Trakman, L. (2008). Modelling university governance. *Higher Education Quarterly*, *62*(1-2), 63-83.

Trigwell, K., Prosser, M., & Waterhouse, F. (1999). Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education*, *37*(1), 57-70. https://link.springer.com/article/10.1023/a:1003548313194

Trigwell, K., & Prosser, M. (2020). *Exploring university teaching and learning: Experience and context*. Springer Nature.

Tufano, P. (2011). Managing risk in higher education. In *Forum Futures 2011* (pp. 54-58). EDUCAUSE.

Ullah, F., Qayyum, S., Thaheem, M. J., Al-Turjman, F., & Sepasgozar, S. M. (2021). Risk management in sustainable smart cities governance: A TOE framework. *Technological Forecasting and Social Change*, *167(5)*, 1200-1237.

University of Cape Town. (2021, July, 27). *How UCT helps you own your first year. https://muse.jhu.edu/pub/288/article/707279/summary*

University of Johannesburg. (2024, March 5). *The first year experience. https://www.uj.ac.za/teaching-and-learning/academic-development-centre-adc/professional-academic-staff-development-pasd/*

University of the Witwatersrand Johannesburg. (2024, July 16). *First year experience.* https://www.wits.ac.za/students/first-year-experience/

Van der Bank, C. M., & Nkadimeng, M. R. (2014). Exploring funding in higher education to eliminate poverty in South Africa. *Academic Journal of Interdisciplinary Studies*, *3*(1), 353-357.

Van der Merwe, L. J., Van Zyl, G. J., Gibson, A. S. C., Viljoen, A., Iputo, J. E., Mammen, M., & Volmink, J. (2016). South African medical schools: current state of selection criteria and medical students' demographic profile. *South African Medical Journal*, *106*(1), 76-81. https://journals.co.za/doi/pdf/10.7196/SAMJ.2016.v106i1.9913

Van der Westhuizen, L. (2023). *Factors influencing throughput of learners in the Youth Focus Project 2017 to 2020* (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Van der Westhuizen, D., & Barlow-Jones, G. (2015). High school mathematics marks as an admission criterion for entry into programming courses at a South African university. *The Independent Journal of Teaching and Learning*, *10*(1), 37-50. https://journals.co.za/doi/pdf/10.10520/EJC179020

Van Greuning, H., & Bratanovic, S. B. (2020). *Analyzing banking risk: a framework for assessing corporate governance and risk management*. World Bank Publications.

Van Niekerk, M. M. (2005). *Transformational leadership at a higher education institution* (Doctoral dissertation, University of South Africa).

Vasquez, H., Fuentes, A. A., Kypuros, J. A., & Azarbayejani, M. (2015, October). Early identification of at-risk students in a lower-level engineering gatekeeper course. In *2015 IEEE Frontiers in Education Conference (FIE)* (pp. 1-9). IEEE. Early identification of at-risk students in a lower-level engineering gatekeeper course | IEEE Conference Publication | IEEE Xplore

Veerasamy, A. K., D'Souza, D., Apiola, M. V., Laakso, M. J., & Salakoski, T. (2020, October). Using early assessment performance as early warning signs to identify at-risk students in programming courses. In *2020 IEEE Frontiers in Education Conference (FIE)* (pp. 1-9). IEEE.

Vernon, N. (2023). Employee Awareness And Training. *EDPACS*, *68*(4), 26-37.

Verschuren, P. (2003). Case study as a research strategy: Some ambiguities and opportunities. *International Journal of Social Research Methodology*, *6*(2), 121-139.

Wahyudin, A. Y., & Wahyuni, A. (2022). Exploring Students' Learning Style and Proficiency at a University in Indonesia: A Quantitative Classroom Research. *TEKNOSASTIK*, *20*(2), 77-85.

Walsh, M., & Wigens, L. (2003). *Introduction to research*. Nelson Thornes.

Wambui, T. W., Ngari, J. M., & Waititu, A. (2016). Teaching Experience of Part-Time Lecturers Affect the Quality of University Education in Public Universities in Kenya. *European Journal of Research and Reflection in Educational Science*, *4*(6), 12-16.

Winchester-Seeto, T., Rowe, A., & Mackaway, J. (2016). Sharing the load: Understanding the roles of academics and host supervisors in work-integrated learning. *Asia-Pacific Journal of Cooperative Education*, *17*(2), 101-118.

Wenham, K. E., Valencia-Forrester, F., & Backhaus, B. (2020). Make or break: The role and support needs of academic advisors in work-integrated learning courses. *Higher Education Research & Development*, *39*(5), 1026-1039.

Wessels, J. S., & Sadler, E. (2015). Risk management in higher education: An open distance learning perspective. *Southern African Business Review*, *19*(2), 74-98.

Wong, S. C. (2020). Competency definitions, development and assessment: A brief review. *International Journal of Academic Research in Progressive Education and Development*, *9*(3), 95-114.

Woolcott, G., Galligan, L., Whannell, R., Marshman, M., Axelsen, T., Schmalz, J., & Sultanova, N. (2021). How are we progressing with academic numeracy at regional universities? Perspectives from first-year undergraduate studies. *Mathematics Education Research Journal*, *33*(3), 451-468.

West, A. (2006). Theorising South Africa's corporate governance. *Journal of Business Ethics*, *68*(4), 433-448.

Wild, J. and Diggines, C. (2013). Marketing research. Cape Town: Juta and Company Ltd.
https://www.scirp.org/reference/referencespapers?referenceid=3634418

Wagner-Menghin, M. M. (2005). Binomial test. *Encyclopedia of statistics in behavioral science*. Wiley
https://onlinelibrary.wiley.com/doi/abs/10.1002/0470013192.bsa743

Wang, C., Cheng, Z., Yue, X. G., & McAleer, M. (2020). Risk management of COVID-19 by universities in China. *Journal of Risk and Financial Management*, *13*(2), 36.

Wilson-Strydom, M. (2015). Access and success–Transition into and through higher education. *2nd Higher Education Summit Pretoria: Department of Higher Education: South Africa*.

Wisdom, J., & Creswell, J. W. (2013). Mixed methods: integrating quantitative and qualitative data collection and analysis while studying patient-cantered medical home models. *Rockville: Agency for Healthcare Research and Quality*, *13(2)*, 1-5.

Xenos, M., Pierrakeas, C., & Pintelas, P. (2002). A survey on student dropout rates and dropout causes concerning the students in the Course of Informatics of the Hellenic Open University. *Computers & Education*, *39*(4), 361-377.

Xerri, M. J., Radford, K., & Shacklock, K. (2018). Student engagement in academic activities: a social support perspective. *Higher Education*, *75(11)*, 589-605.

Xiong, S., & Lee, S. E. (2011). Hmong Students in Higher Education and Academic Support Programs. *Hmong Studies Journal*, *12(8), 22-31*.

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.

Yirdaw, A. (2016). Quality of education in private higher institutions in Ethiopia: The role of governance. *SAGE Open*, *6*(1), 21-43
https://journals.sagepub.com/doi/pdf/10.1177/2158244015624950

Zefeiti, S & Mohamad, N. A. (2015). Methodological considerations in studying transformational leadership and its outcomes. *International Journal of Engineering Business Management*, *7(5)*, 10.

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and Practice in Language Studies*, *3*(2), 254.

ANNEXURE A – LETTER OF INFORMED CONSENT

UNIVERSITY OF KWAZULU-NATAL ™

INYUVESI YAKWAZULU-NATALI

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

LETTER OF INFORMED CONSENT

Information Sheet and Consent to Participate in Research

Date: 15 September 2019

Dear Sir/ Madam

My name is Rajesh Ramlall from the Department of Auditing and Tax at the Durban University of Technology. My contact details are as follows:

[redacted]
E-mail: rajeshr@dut.ac.za

You are being invited to consider participating in a study that involves research into the risks relating to student admission, throughput and graduation at the Durban University of Technology. The aim and purpose of this research is to determine and assess and evaluate the risks and interventions relating to student admission, throughput and graduation and make suitable recommendations.

The study is expected to be undertaken in the Faculty of Accounting and Informatics at the Durban University of Technology (Durban Campus). The study will involve the issuing of questionnaires to academic staff and students in the above faculty as well as semi structured interviews. A sample of fifty and three hundred questionnaires will be issued to staff and students respectively. Semi structured interviews will be conducted with the Dean of Students, Registrar, Chief Risk Officer, Dean of the Accounting and Informatics Faculty, the Faculty Teaching and Learning Officer and the Director of Student Support. The duration of participation will be one hour for questionnaires and one and half hours for the interviews.

The study is anticipated to benefit the researcher, future research, the university and possibly influence policy.

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

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

Please note that participation in this research is voluntary and participants may withdraw at any point. No penalty or loss will be suffered by participants should they choose to withdraw. No costs will be incurred by the participants.

All information obtained will be treated as highly confidential. The confidentiality of data will be protected as follows:

(a)The research data will be stored in a secure place for at least five years. This will be done in agreement with my supervisor.
(b)After five years the data will be disposed in a manner agreed with the supervisor.

ANNEXURE B – ETHICS APPROVAL

UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

21 October 2019

Mr Rajesh Ramlall (8933354)
School Of Education
Edgewood

Dear Mr Ramlall,

Protocol reference number: HSSREC/00000085/2019
Project title: Risk Profiling as a tool to ensure successful student placement, throughput and graduation: A Case Study of the Durban University of Technology.

Full Approval – Expedited Application

This letter serves to notify you that your application received on 12 July 2019 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) 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.

This approval is valid for one year from 21 October 2019.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

Yours sincerely,

[redacted]
pp **Dr Rosemary Sibanda (Chair)**

/dd

ANNEXURE C – LETTER TO PARTICIPANT

College of Humanities
Faculty of Education
121 Marianhill Rd
Pinetown
Durban
3605

27 February 2020

Dear Participant
I am currently studying towards a PhD in Higher Education in the Faculty of Education at the University of Kwa-Zulu Natal. I am conducting research on the topic titled: ***Risk Profiling as a tool to ensure successful student admission, throughput and graduation: A Case Study of the Durban University of Technology.*** The aim of the study is to assess and evaluate the risks and interventions in place to ensure successful student admission, throughput and graduation.

It would be greatly appreciated if you would complete this **anonymous** questionnaire. Your co-operation in assisting me with this important aspect of my study is highly appreciated.

If you have any queries, please feel free to contact me at:
rajeshr@dut.ac.za OR
[redacted]

Thanking you in anticipation.

Yours faithfully

_____
Mr Rajesh Ramlall

_____
Supervisor: Dr Jeffrey Mkhize

APPENDIX D – PERMISSION TO CONDUCT RESEARCH

DUT
DURBAN UNIVERSITY OF TECHNOLOGY

Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732946

26th August 2019

Mr Rajesh Ramlall
c/o College of Humanities
Faculty of Human and Social Sciences
Durban University of Technology

Dear Mr Ramlall

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted **Provisional Permission** for you to conduct your research "Risk Profiling as a tool to ensure successful student placement, throughput and graduation: A Case Study of the Durban University of Technology" at the Durban University of Technology.

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

We would be grateful if a summary of your key research findings can be submitted to the IRIC on completion of your studies.

Kindest regards.
Yours sincerely

[redacted]
PROF KEVIN DUFFY
ACTING DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT DIRECORATE

ANNEXURE E - SURVEY OF STUDENTS

NOTE: THIS STUDY IS ANONYMOUS

Thank you for taking time to complete this questionnaire!!!

INSTRUCTIONS TO RESPONDENTS:

1. Please select ONLY ONE response for each question.
2. Answer ALL questions

SECTION A

1. Please indicate your year of study:

Second Year	Third Year

2. Please indicate your gender:

Male	Female

3. Please indicate your Race:

Black	Coloured	Indian	White

4. Please indicate the qualification you are studying towards:

Diploma in Accounting	Diploma in	Diploma in Taxation	Diploma in Cost and

	Internal Auditing		Management Accounting

SECTION B

ADMISSION

1. Indicate your agreement with the following statements:

	Strongl	**Disagre**	**Neutral**	**Agree**	**Strongl**
1.1 I understand the university's admissions policy and entrance criteria.					
1.2 I understood the CAO applications process when I applied for a place to study.					
1.3 I prefer applying directly to the university than using the CAO system.					
1.4 The entrance criteria are fair.					
1.5 Students with better matric results have a better chance of passing at university.					
1.6 I am happy with the qualification for which I have been accepted to study.					

2. Indicate if the following apply to you:

	YES	NO
2.1 I wrote an entrance exam before being accepted by the university.		
2.2 The qualification for which I was accepted was my first choice.		
2.3 I have studied and passed Accounting up to grade 12.		
2.4 I have studied and passed Maths up to grade 12.		
2.5 I have attended an orientation program in my first year of study.		

ACADEMIC SUPPORT SERVICES

3. Indicate your agreement with the following statements:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
3.1 I am aware of all the academic support services that the university offers (ie. tutorial classes, the writing centre, mentoring system).					
3.2 The academic support services available to students are sufficient.					
3.3 Students need the most academic support in their first year of study.					
3.4 There is a need for more tutorial classes.					

3.5 Currently, tutorial classes are too large.					
3.6 Tutors are adequately trained to teach.					
3.7 I am responsible for my own academic performance.					
3.8 The university is also responsible for my student performance.					
3.9 The university puts the student's interest first.					
3.10 The university listens to student's needs.					

4. Indicate if the following apply to you:

	YES	**NO**
4.1 I have made use of the academic support services.		
4.2 I attend all tutorial classes relevant to my courses.		
4.3 I have complained about my tutors poor teaching skills.		

LECTURERS

5. Indicate your agreement with the following statements:

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**

5.1 I am satisfied with the way my lecturers teach.					
5.2 A lecturers qualification and his ability to teach are not necessarily related (ie. a lecturer may be highly qualified BUT he may not be able to teach well).					
5.3 Students sometimes need to pay tutors for extra tuition because they cannot understand their lecturers.					
5.4 All lecturers should have practical (industry) experience in their relevant subject matter.					
5.5 Students are afraid of complaining about lecturers to the department head because they feel that they will be victimised (ie. made to fail).					
5.6 Student evaluations (LEO's and SEQ's) should be handed and collected by an independent person/department (ie. lecturers should not be involved).					
5.7 Students get feedback on the outcome of lecturer evaluations.					

6. Indicate if the following apply to you:

	YES	**NO**
6.1 I have paid tutors for extra tuition.		
6.2 I have complained about a lecturer's teaching.		

6.3 I have gotten feedback on **ALL** the lecturer evaluations that I completed (LEQ's and SEQ's).		

7. ASSESSMENTS

Indicate your agreement with the following statements:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7.1 I prefer written tests to online tests.					
7.2 Online tests do not prepare me for written examinations.					
7.3 Students are able to give input as to whether they want online or written tests.					
7.4 Multiple choice assessments (ie. tests and exams) do not prepare students for the working world.					
7.5 Lectures and tutorials adequately prepare me for assessments (ie. tests and exams).					
7.6 We write too few tests.					
7.7 My lecturers go over the tests and their solutions with us within 10 days after writing the test.					

8. Indicate if the following apply to you:

	YES	NO
8.1 I have written an online test.		

8.2 I have had input on whether I want an online or written assessment (ie. tests and exams).		
8.3 I have written multiple choice assessments (ie. tests and exams).		
8.4 I have failed multiple choice assessments (ie. tests or exams).		

9. AT RISK STUDENTS

Indicate your agreement with the following statements:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not applicable
9.1 I am aware of what an "at risk" student is.						
9.2 I am aware of the universities "at risk" policy and how it affects me.						
9.3 Whenever I failed a test, my lecturer always requested a meeting with me to find out why I performed badly and to help me draw up a recovery plan.						
9.4 "At Risk" students should be provided with a mentor.						

10. Indicate if the following apply to you:

	YES	NO
10.1 I have failed a test.		
10.2 I have a mentor.		

11. GRADUATION

Indicate your agreement with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
11.1 I think I will graduate within the minimum time period (ie. 3 years for National Diploma Programs and 4 years for the Extended Curriculum Program.					
11.2 The ECP (Extended Curriculum Program) is helping students to graduate within the minimum time period.					
11.4 In order to increase the graduation rate, most of the academic support should be provided in the first year of study					
11.4 The university is doing its best in trying to increase the graduation rate.					

12. Indicate if the following applies to you:

	YES	NO
12.2 I am registered for the Extended Curriculum Program (4 year program).		

ANNEXURE F - QUALITATIVE INTERVIEW QUESTIONAIRE

Q 1: What is your current job designation?
Q 2: What is your gender?
Q 3: What is your age?
Q 4: How many years are you in your current position?
Q 5: Do you feel that the institution's policies and processes with regards to student admission are designed in such a way that they promote student success?
Q 6: What are the current risks relating to student admission and throughput?
Q 7: What measures are in place to manage the risks identified?
Q 8: Does your department currently have an 'at risk' policy for your students?
Q 9: How does your department go about identifying 'at risk' students?
Q 10: Are there any process in place that is used to identify 'at risk' students at the time when you are selecting them so that if you know they are at risk you can provide early support?
Q 11: What is the approximate percentage of students that dropout in your department?
Q 12: How does your department or the faculty go about determining the academic support that is needed by students?
Q 13: How do you measure whether the support programmes are actually working?
Q 14: Are you aware of any risk workshops that are conducted to make you aware of the role that you can play in ensuring student success?
Q 15: How do you incorporate this risk management principle in your departmental plans to increase the throughput and graduation rate?
Q 16: How is your department's throughput and graduation rate when you compare it with DHET benchmarks?
Q 17*:* Lastly, is there anything you would like to add?

ANNEXURE G - SEKARAN AND BOUGIE'S LIST FOR SELECTING A SAMPLE SIZE FROM A GIVEN POPULATION SIZE

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Sekaran and Boughie (2014, p.268)

ANNEXURE H – EDITING CERTIFICATE

NERESHNEE GOVENDER COMMUNICATIONS (PTY) LTD

REGISTRATION NUMBER: 2016/369223/07
DR NERESHNEE GOVENDER (PhD)
neresh@ngcommunications.co.za
0847022553
WRITING PRACTITIONER • EDITOR • COPYWRITER • TRAINER

PhD-Management Sciences: Marketing (gender and media); *PG DIP - Higher Education - Academic Developers (Cum laude;)* M-Tech Public Relations; B-Tech Public Relations *(Cum laude);* B-Tech Journalism *(Cum laude); N-Dip Journalism*

19/12/2024

Rajesh Ramlall
UKZN
PhD
Supervisor: Prof L Ramrathan

RE: EDITING CERTIFICATE

FOCUS AREA: RISK MANAGEMENT AS AN AID TO IMPROVE STUDENT THROUGHPUT

Dissertation submitted in fulfilment of the academic requirements for the degree of Doctor of Philosophy in Education, School of Education, College of Humanities, University of KwaZulu-Natal, South Africa

This serves to confirm that this research has been edited for clarity, language and layout.

Kind regards,

[redacted]

Nereshnee Govender (PhD)