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Exploring the impact of increasing class size on the quality of learning in Higher Education: perspective of students at the University of KwaZulu-Natal

Masters Dissertation by

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COLLEGE OF HUMANITIES

DECLARATION

I, **Lefa Letseka** declare that:

1. Research reported in this dissertation, except where otherwise referenced and indicated, is my original work.
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ABSTRACT

Like many countries in Sub-Saharan Africa, South Africa's higher education sector is grappling with the issue of large classes, having accommodated 473000 students in 1993, the number rose to 799388 in the period between 1993 and 2008 and the student headcount was 975837 in 2016 (Department of Higher education and Training (DHET), 2017). The rise in the number of students enrolling in tertiary institutions has led to an increase in class size. The focus of this qualitative study is to explore students' perceptions of large classes concerning their learning. The study was conducted at the University of KwaZulu-Natal in the KwaZulu-Natal province of South Africa. Data was generated through telephonic interviews; this was done to adhere to covid lockdown regulations in South Africa which encourage social distancing, hence discouraging face-to-face interviews. The main findings of the study show that students in large classes are mainly affected by classroom incivility which often leads to disruptions and limited student and lecturer interactions. Students themselves describe the large class size learning environment as 'stressful' and less productive when compared to a smaller class size environment. Students of large classes are affected by conditions such as resource constraints, minimal student and lecturer interactions, and disruptive student behaviour. Findings show that some lecturers can mitigate large class size negative effects using effective classroom management techniques, such as establishing and preventing undesirable behaviour during lectures. The findings also show that students use certain techniques to overcome some undesired consequences of large classes. These include joining study groups and consulting academic tutors and lecturers when struggling to understand the course material. The participants of this study also advocate for greater self-reliance and thorough preparation before attending any lecture. It is recommended that lecturers incorporate teaching methods that encourage students' participation in large classes. The study highlighted the need to investigate the aspects of a large class size environment that promote classroom incivility.

Keywords: Higher Education Institutions, student engagement, class size, classroom interactions, teaching and learning, Incivility.

DEDICATION

The fruits of this dissertation are dedicated to my dear parents. Mme Malefa, Mrs F.T Letsekha and Ntate Felix, Mr F.T Letsekha- this is for you, Ngiyanibonga Nala! Tebele!

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ACRONYMS AND ABBREVIATIONS

DBE	Department of Basic Education Syndrome
DBSA	Development Bank of Southern Africa
DHE	Department of Higher Education
DHET	Department of Higher Education and Training
HBU	Historical black university
HEI	Higher Education Institutions
HWU	Historical White University
NES	National Centre for Education Statistics
NSFAS	National Student Financial Aid Scheme
UKZN	University of KwaZulu-Natal
UNESCO	United Nations Educational, Scientific and Cultural Organization

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Chapter One:

Introduction

1.1 Background to the study

Like many countries in Sub-Saharan Africa, South Africa's higher education sector is grappling with the issue of large classes (Matoti & Lenong, 2018; Mve, 2021). In line with increasing access to higher education and massification of education across the world, large classes have become a common feature in South African institutions of higher learning (Moodley, 2015). Massification refers to a trend where masses of people adopt a certain phenomenon (Chimombo, 2009). Massification in high education is a term used to describe the rapid increase in student enrolment in higher education institutions (Cash, Letargo & Jacobs, 2017). According to Matoti and Lenong (2018), in the South African context, a large class can mean 120 students in one seating, which is 100 students more above the targeted national student-staff ratio of 20:1 students per staff (Machika, Troskie-de Bruin & Albertyn, 2014). However, they are often charged with the responsibility to expand their facilities as students cannot be turned away (Machika et al., 2014).

The South African department of higher education and training clearly states in its goals that increasing participation in higher education should be prioritized (Department of Higher Education (DHET), 2017). To adhere to this policy, institutes of higher education must admit as many students as possible in their institutions. Consequently, this has led to an influx of first-year students in higher education institutions which in turn has resulted in large classes or overcrowded classes (Moodley, 2015; Matoti & Lenong, 2018). Graduation rates remain low, despite calls for a shift from 'open access' to 'access with success', low graduation outputs and higher dropout rates remain common features of South African higher education (Machika et al., 2014). Advancing the class size debate, this study explores the effects of expanding access to higher education by considering its direct result and, focuses on increased class size or large class size and how it affects the quality of student learning (Tlali, Mukurunge & Bhila, 2019).

The search for 'optimal' class size and the quest for some 'magical' number that would make the teaching and learning process bearable is not new in educational research. This notion is supported by Bakasa (2011, p. 17) who states that "it may rival the search for the Holy Grail

in both duration and lack of results”. The class size debate might be more than centuries-old; some studies reveal that the topic of class size can be traced back to a period of history when a maximum of twenty-five students was proposed as the number suitable in the bible studies class (Blatchford, 2003). Frequently, two terms are used in the class size debate that is, class size and student-teacher ratio. These terms are related but involve different assumptions and it is important to distinguish between the two terms (Blatchford, 2012). Class size and student-teacher ratio are defined, computed, and used differently depending on context and individual researchers (Blatchford, 2012). According to the Glossary of Educational Reform (2020), class size focuses on group size on site such as the number of students a teacher instructs in a classroom. Proponents of smaller classes argue that a smaller number of students in a class can afford the teacher an opportunity to develop an in-depth understanding of student learning needs, promote focused interactions, and leads to fewer disciplinary problems (Filges, Sonne-Schmidt & Nielsen, 2018). Balestra and Backes-Gellner (2014) define class size as the number of students in a given programme or classroom seating, specifically either the number of students being taught by individual lecturers in a course or classroom or the average number of students being taught by teachers in a school, district, or education system. The term may also be extended to the number of students taking part in learning experiences that may not take place in a traditional classroom setting. It may also refer to the total number of students in a particular grade level or “class” in a school (Kohler, 2020).

The student-teacher ratio is often used as a proxy for class size and can be defined as the total number of students enrolled in an institution divided by the total number of staff or teachers (Balestra & Backes-Gellner, 2014). From this perspective, reducing the student-teacher ratio results in increased learning opportunities. According to Ding and Lehrer (2010), viewing teachers as units of expertise, lowering the ratio translates to increasing units of expertise available to students, but it does not focus on any teacher-student interactions. Mathis (2017) argues that the student-teacher ratio is derived by dividing the number of students at a site, such as a school, by some representation of educators serving that site. For instance, in a classroom with 30 students and one teacher, the class size is 30 and the student-lecturer ratio is 30:1. If two educators serve those 30 students, the class size is 30, but the student-lecturer ratio is 15:1 (Waita, Mulei, Mueni, Mutune & Kalai, 2016). Class size and lecturer-student ratio have changed much in thirty years, but the terms are still used imprecisely and synonymously (Kohler, 2020). Sappelli and Illanes (2016), describe class size as an administrative measure typically defined as the number of students for whom a teacher is primarily responsible during

a school year. The lecturer may be responsible for most of the instruction of the students (as in a self-contained classroom) or just for instruction in one subject as in a departmentalised programme in which teachers are assigned to several classes of different students (Hornsby, Osman & De Matos Ala, 2013). UNESCO (2015) focuses on teaching and learning in higher education, defines a large class and evokes the following understanding, there is nothing like a large class because it only exists in the mind of the orthodox lecturer. A large class is one with more students than available facilities can support. Lastly, a large class depends on the discipline as there is a smaller number for engineering, science, and medicine and a large number for arts, humanities, and social sciences (Mulryan-Kyne, 2010).

Eze (2019) argues that regardless of the number of students in the class, for any meaningful learning to take place, the environment has got to be conducive to the learning process. Eze (2019) goes on to list the physical, psychosocial, and service delivery aspects as factors that constitute a quality learning environment. The physical aspect refers to elements such as a well-equipped building, adequate instructional material, space, and availability of furniture. The psychosocial aspect refers to the provision of a welcoming and no-discriminatory environment. It concerns itself with the provision of a peaceful and safe environment, especially for females (Eze, 2009). Pigozzi (2000) argues that having gained access to education, females still experience both direct and indirect physical assaults on their confidence, self-esteem, and identity. The service delivery aspect describes the offering of meaningful lessons in the classrooms (Evans, 2013).

Frequently, in class size research, the words large class and overcrowded classes are used interchangeably and taken to explain the same concept (Bakasa, 2011). Opinions vary on what constitutes a large class or an overcrowded classroom, different authors and institutions give various explanations regarding these two words. According to the Department of Basic Education in South Africa, the recommended learner-teacher ratio for schools is 30.4: 1, and when this learner-teacher ratio is exceeded, a class can be classified as overcrowded (Department of Education, 2014). According to the National Centre for Education Statistics (NCES) (2000), a large class is where the number of learners exceeds the number that a classroom is made to accommodate.

Universally there is debate on what constitutes a large class; for example, there is an ongoing argument over the precise point at which students begin to benefit from smaller classes

(Balestra & Backes-Gellner, 2014; Blatchford, 2012). Some evidence suggests that lowering class sizes may not have a positive effect on student achievement until the average size drops below 20 students and that educational benefits are measurable only when student-teacher ratios fall to 18 to 1 or 15 to 1 (Iqbal & Khan, 2012). In this case, the government might spend a significant amount of time, human and financial resources in reducing average class sizes, for example, but then fail to reduce ratios enough to see any measurable benefits (Cash et al., 2017). Huxley, Mayo, Peacey, and Richardson (2018) argue that the exact number does not matter, what matters is how the lecturers see the class size in their specific situation. This view is supported by Cash et al. (2017) who suggest that a large class can be any number of students if the lecturer feels there are too many students for them to all make progress. This view is also shared by Blatchford and Russell (2018, p. 4), who mention that “what is taught influences teachers' judgments of the size of classes” which later can influence their definition of a large class.

Mulryan-Kyne (2010) offers a different view by arguing that there is a need to take into consideration the nature of the course, resources, and facilities available. For example, Mulryan-Kyne (2010, p. 176) explains that “meeting the needs of a class of 50 in a science laboratory designed for 30 is likely to be more challenging than presenting a history lecture to 220 students in a lecture room designed for 200”. However, Huxely et al. (2018) define large class sizes as classes with students above two hundred in large university lecturing rooms. Thus, there is an intersection of the factor of class size with a variety of other factors as one of the reasons behind such a controversy. There is no consensus among researchers about the definition of a large class. Hornsby et al. (2013) note that the definition of large class size differs according to discipline, level, and nature of the class and the perceptions of lecturers and individual students. Huxely et al. (2018) further argue that a large class may include an introductory class of seven hundred students or an upper-year seminar with fifty students. Similarly, in some countries, 25-30 students per teacher could be considered large, while in other countries this is seen to be normal or even quite small.

Huxely et al. (2018) state that the typical class size in many institutions of higher education in the twentieth century is likely to be 80 to 100, with a small group being defined as that involving 16 to 20 students. Huxely et al. (2018) warn that while a high post-school participation rate is plausible, excessive enrolment may shock the system and it may not adapt fast enough. This could result in Higher Education Institutions (HEIs) responding by modelling

themselves on existing systems of mass higher education or by attempting to remain as they are and finding that resources are stretched beyond acceptable limits.

Salgado et al. (2018) advance several reasons for variations in terms of optimum class sizes in different learning institutions. Salgado et al. (2018) believe that systems around the world differ in many aspects and important sources of variation include examination systems and the existence of high-stake incentives for students and educators. It also includes the provision of remedial instruction for lagging students or enrichment classes for outstanding achievers, the level of allocation of resources, and the quality of educators among others. Salgado et al. (2018) believe that these factors inform class sizes in many institutions. However, some assumed estimations of educational production functions may be biased by omitted variables such as characteristics of good teaching. These include the ability to communicate challenging content; involve students in hands-on experiences; provide clear and immediate feedback and supportive family involvement and endogeneity of class size for student performance. In this regard, Millea, Wills, Elder and Molina (2018, p. 315) state that estimating the “true” class size impact, which is the causal outcome of class size on learner performance, requires an identification strategy. Millea et al. (2018) maintain that this should restrict the analysis of exogenous variations in class size, being the factors than those mentioned earlier. Several of these exogenous features involve classroom management issues such as student discipline and instilling a culture of hard work (Millea et al., 2018).

Comparing the teaching and learning process in small and larger classes, various studies revealed that, overall, differences were in student misbehaviour and classroom management (Leufer, 2012). These include teacher misbehaviour reprimands, teacher control, noise levels, student engagement, perception of class size and effectiveness, the use of in-depth projects and equipment as well as student assignment choices (Ayeni & Olowe, 2016). After assessing the plethora of factors that Salgado et al. (2018) believe contributed immensely to student achievement, teacher behaviour, teacher feedback, and student cooperative help, it was found that these factors were more prevalent in large classes. Variables such as potential grade inflation, student aptitude, lower academic standards, and lack of remediation for ill-prepared and disadvantaged students, teaching styles, and student motivation and effort could confound research results in this area and may also account for inconsistent results (Salgado et al., 2018).

Mathis (2017) suggests that although there is strong evidence that smaller class sizes improve student performance, at least in some circumstances, using diverse methodologies to test the data can lead to different conclusions. Some economists argue that there is a need to weigh the costs of achieving smaller classes versus the cost of improving student achievement by other means (Glewwe, Maiga & Zheng, 2014). Mathis's (2017) investigation concludes that the strategy of class size manipulation should be reassessed and a new impetus for educators in HEI's should be encouraged, to look beyond the usual methods and investigate new trends for creating effective classrooms.

1.1.1 Higher education in South Africa

Higher education systems are charged with the responsibility to perform four core functions in society, namely: producing values and social legitimation, selecting the elite, training the labour force, and producing new knowledge (Cloete, Maassen & Pillay, 2014). In South Africa, higher education is expected to contribute to social and economic progress (Kimenyi, 2011). Owing to South Africa's historical background, higher education core functions are expanded to deal with and arrest issues of poverty and inequality and redress the legacy of apartheid (Machingambi, 2011; Mouton, Louw & Strydom, 2012). More than twenty-seven years post-apartheid, South Africa's higher education system has seen a wide range of transformation-orientated policies (Sehoole & Phatlane, 2013). The higher education system was reformed after the 1994 democratic elections when the post-apartheid government inherited an education system whose expression was to exclude certain demographic groups and limit access to the minority of South Africans (Cloete, Bailey & Maassen, 2015; Mzangwa, 2019). Sehoole and Patlane (2013) argue that one of the distinguishing features of South African higher education before the 1994 democratic election was the unequal access to higher education among racial groups. Clear inequities were observed in the participation rates when it was broken down in terms of race. While Africans made up 80 per cent of the total population, their participation rate was merely 9 per cent. Minority participation rates were significantly higher than those of Africans (those of African origin). For example, participation rates for Indians (those of Indian origin) and whites (those of European origin) were 40 per cent and 70 per cent respectively, this is despite the latter constituting a mere 10 per cent of the South African population (Boughey, 2012). Consequently, one of the priorities of the democratic government was to formulate and adopt policies that redressed the legacy of apartheid (Sehoole & Adeyemo, 2016; Mzangwa, 2019).

One of the key strategies adopted by the post-apartheid government to address the country's high inequality is increasing access to higher education and strides have been made on that front (Badat, 2010). Enrolment numbers increased by more than 100% in the period between 1993 and 2016 (Tewari, 2016). However, there is a recurring concern among those involved in the higher education sector that the ambition to promote participation in higher education has resulted in quality and learning outcomes being sacrificed (Scott & Ivala, 2019; Machika et al., 2014). Scott and Ivala (2014) argue that like in most developing countries, large classes are an inevitable feature of the South African education system. They further predict that because of population growth, the large class phenomenon is here to stay. The posture of the South African government suggests that increasing participation is the immediate priority. The DEPARTMENT OF HIGHER EDUCATION states that the goal is to ensure access to many students, especially those from disadvantaged backgrounds (Department of Education, 2014; Mdepa & Tshiwula, 2012).

Tewari and Ilesanmi (2020) argue that the quest to get many students into higher education institutions has not been supported by necessary resources, leading to high dropout rates and students taking too long to graduate. This is supported by Badat (2016) who argues that while enrolment has grown rapidly, the subsidy provided by the government per student has dwindled dramatically. Tewari (2016) argues that the high participation not backed by resources provides an environment that does less in assisting a student to succeed. Large groups of students in classrooms are often cited as one of the reasons for the high dropout rate of first-time entering students (Sehoole & Adeyemo, 2016). Table 1.1 below depicts the student-to-staff ratio in all South African universities between 2007 and 2013. The student-to-staff ratio was above the national target of 20 students per staff member. The highest student-staff ratio was recorded at 87:1 in 2011, the national average ranged from 25 and 27 which is higher than the targeted average of 20. The table shows that while there are disparities across the university student-staff ratios, institutions such as the University of South Africa and the University of Zululand have significantly higher ratios than other universities. The student-staff ratios may portray whether there is enough staff in institutions to serve their respective enrolments, however, they do not indicate the ratios in specific programs nor do they indicate the class sizes in different disciplines (Chen, Lowenthal & Bauer, 2016).

Table 1.1: Student to staff ratio within all universities in South Africa, 2007-2013

	2007	2008	2009	2010	2011	2012	2013
UNISA	80	87	85	83	87	82	78
UNIZULU	31	32	36	38	38	40	36
MAN	42	46	43	44	39	40	36
UFH	24	25	27	29	30	31	32
DUT	28	27	30	31	29	28	30
TUT	36	34	35	31	30	30	30
UJ	14	18	19	20	19	19	29
WSU	31	33	30	31	29	27	28
NMMU	27	26	27	28	30	28	28
VUT	31	33	37	36	34	30	27
CUT	28	28	29	28	27	26	26
UNIVE	39	36	34	29	24	23	26
UWC	19	17	19	22	20	22	22
NWU	36	30	26	29	29	22	22
UKZN	17	17	19	20	19	19	21
UFS	17	18	18	19	21	21	20
UP	19	19	20	20	21	21	20
ULP	18	15	15	18	20	20	19
SUN	18	19	19	18	18	18	17
RHODES	16	15	16	16	11	13	14
UCT	15	15	16	15	13	13	12
UWITS	10	11	11	11	10	11	11
Average	25	26	27	27	27	26	27
National target	20	20	20	20	20	20	20

Source: Council on Higher education and Training (Centre for Higher Education Trust, 2016)

The continual rise in the number of students has had direct and pressing implications for the process of teaching and learning in higher education (Solheim & Opheim, 2019). Waita et al. (2016) argue that while developing countries have been able to improve the percentage of literacy to impress the international fraternity, the quality of education being offered has been a major concern due to congested classrooms resulting from high enrolments. As the enrolment

numbers increase, capacity issues continue to rise. While South African universities have had to accommodate 473000 students in 1993, this number increased to 799388 in the period between 1993 and 2008 and the student headcount was 975837 in 2016 (Department of Higher Education and Training (DHET), 2017). The department of higher education suggests that these numbers are likely to increase because of the increasing National Student Financial Aid Scheme (NSFAS) for fee-free higher education for those students who could not afford to pay university fees (Langa, Wangenge-Ouma, Jungblut & Cloete, 2017). Furthermore, there are calls for more access to higher education, and the questions of capacity in terms of the maximum number of students that can be accommodated in the class without exerting more strain on classroom resources and classroom processes are yet to be addressed (Department of Higher Education and Training (DHET), 2017).

While increased participation remains a key component of the transformation agenda of South African higher education, there is still a gap between targeted student success and actual success (Akoojee & Nkomo, 2007; Akulu, 2016). Several initiatives have been instituted in South African higher education and there has been a success in increasing participation but there are recurring concerns about low student success, low graduation rates, and high drop-out rates (Letseka & Maile, 2008; Spaul, 2013). This study explores the impact of widening access to higher education by considering one result of it: increasing class size and its effect on the quality of learning. The terms: increasing class size, large classes, and large class size are often used interchangeably in class size research; the study adopts the same stance (Baruth, 2009).

1.2 Motivation for the study

A focus on the effects of large classes on the quality of learning in higher education (HE) is important given the ongoing debates on access, retention, completion, and satisfaction within the higher education context (Eckel & King, 2004). The rapid increase in class size in study programmes is an issue in South African institutes of higher education (Department of Higher Education and Training (DHET), 2017). Comparable to most spheres of social life in South Africa, the higher education system was once characterised by the systematic exclusion of some demographic groups such as Blacks, women, and other non-Whites because of colonialism and apartheid (Development Bank of Southern Africa (DBSA), 2016). Post-1994, responding to the need for educational systems that address the needs of all students,

irrespective of their socioeconomic background, a wide range of transformation-oriented initiatives were adopted (Akoojee & Nkomo, 2007). Coupled with factors such as growth in university-going students and an increase in the percentage of high school graduates enrolling in higher education institutions, the transformation initiatives have increased higher education participation rates (Badat, 2010; Mzangwa, 2019).

While more lecture venues have been built, and resources channelled towards education in South Africa's HEIs, the student-lecturer ratio has kept increasing (Mzangwa, 2019). This has altered classroom processes such as classroom management, student-lecturer interaction, student-student interaction, and ultimately the teaching and learning opportunities (Majgaard & Mingat, 2012). For example, in 2016 the DEPARTMENT OF HIGHER EDUCATION enrolled 975 837 students in public HEIs and 638 001 were contact learners and 337 836 were distance learners (Department of Higher Education and Training (DHET), 2016). The number of lecturers in these public HEIs was 19 214. This resulted in lecturers increasing their workload which includes more teaching time, supervision, and administrative duties due to larger class sizes following widening access (Akoojee & Nkomo, 2007; Lewin & Mawoyo, 2014). This study, therefore, seeks to provide more insight into the relationship between the quality of higher education and the 'expanded' access brought by free-fee higher education for the poor in South Africa. It looks at student and lecturer expertise needed to promote teaching and learning in large classes.

There is a relatively large body of literature that focuses on class size effects on teaching and learning. Much of which is presented to capture the effects of class size on student achievement, and less explicitly deals with the possible effects of large classes on classroom processes (Bettinger, Doss, Loeb, Rogers & Taylor, 2017; Sapelli & Illanes, 2016; Wright, Bergom & Bartholome, 2019). Many researchers suggest that the issue of class size is complex because of classroom processes that are often ignored in class size research (Beattie & Thiele, 2016; Huxley, Mayo, Peacey & Richardson, 2018). There is a need for detailed studies of classroom processes that are likely to mediate the impact of class size on teaching and learning. This is because deficiencies in class size research are often highlighted in reviews that often criticise class size research for failing to take into consideration the full complexity of cause and effect in classroom life (Pedder, 2006). To establish the impact of large classes on the quality of learning in Higher Education, this study also pays attention to the strategies used by students in different classroom contexts to achieve their goals.

1.3 Problem Statement

Institutes of higher education in the world have a role to play in national socio-economic development, they are established to ascertain that certain goals are met (Tlali et al., 2019). Chiefly, HEI's are charged with the responsibility to train human capital and provide skills that are relevant to a country's socio-economic development. The South African government has made strides in increasing and widening access to higher education. This is in line with the United Nations Development goals whose one of its objectives is to increase access to tertiary education for both women and men (Tewari, 2016; Department of Higher Education and Training, 2019). While there has been a substantial increase in student enrolment, there are recurring concerns about increased participation not being matched by increased student success (Sehoole & Phatlane, 2013). Improving student success and throughput rates is one of the most cited challenges facing institutions of higher learning in South Africa (Sehoole & Adeyemo, 2016). In much of the literature on South African higher education, there is a notion, either implicit or explicit, that the widening of access to education has negatively impacted the quality of learning (Akoojee & Nkomo, 2007; Sehoole & Adeyemo, 2016).

According to Machika et al. (2014), increased access has created resource constraints on institutions of higher learning. There is a notion that South African HEI's are overwhelmed by the influx of first-year students, for example, Sehoole and Adeyemo (2016) argue that institutions of higher learning in South Africa are not adequately capacitated for massive enrolment of students. According to Nyamupangedengu (2017), one common feature of HEI's in South Africa is large classes, which often leads to limited student engagement and low student academic success, and the overall quality and effectiveness of the education system being compromised. As a result, this study undertakes to investigate the challenges of increased class size and its impact on the quality of student learning. Wanous, Procter, and Murshid (2009) argue that large class size is increasingly less accepted as an excuse for not adopting new more effective approaches. This view is supported by Pedder (2006) who notes that lecturers who work in different contexts can bring different strengths and expertise to the classroom and that their students come to class with different personalities, and behavioural and cognitive capacities. Therefore, lecturers can maximise opportunities for students to learn in classes of different sizes in various ways. However, other scholars argue that learning in a

large class impacts negatively on student performance (Bitner et al., 2008; Sapelli and Illaness, 2016; Bettinger et al., 2017, Wright et al., 2019).

1.4 Research objectives

The overall objective of the study is to shed insights into the impact of class size on the quality of education. The specific objectives of this study are:

1. To investigate the perception of students on large class sizes on the quality of education.
2. To establish how large class sizes affect classroom interactions such as student-student interactions and instructor-student interactions.
3. To examine student experiences in large classes.

To adequately answer the overarching research question: what are the challenges of increased class size and its impact on the quality of student learning? The study is guided by the following key questions:

1. How do students view large class sizes?
2. How do large class sizes, affect classroom interactions such as student-student interactions and instructor-student interactions?
3. What are students' experiences in large classes?

1.5 Theoretical Framework

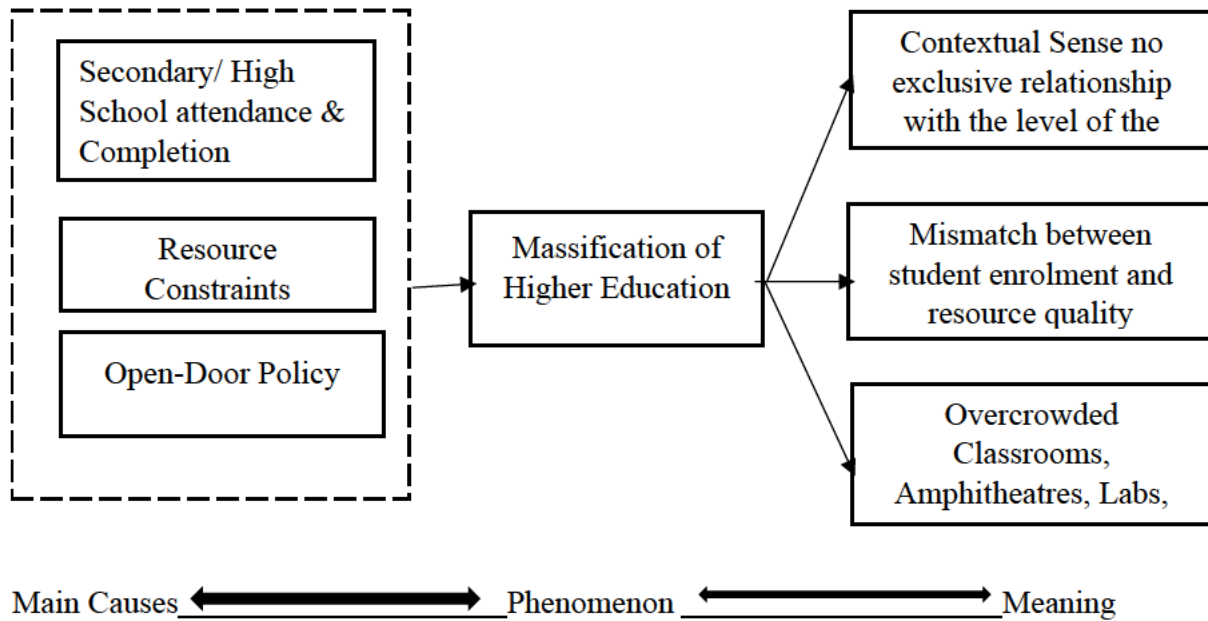
This study was guided by Martin Trow's Structural-historical theory and the class size theory developed by Preece in 1987. The reason for the selection of structural-historical theory was to use its higher education transformation concepts to explain the link between massification and the quality of learning in higher education. The theory acknowledges that quality in education is a compound concept of many factors. Its measurer is based on the unity of development, standardization, adaptation, serving, and resource allocation in higher education systems (Tlali et al., 2019). Focusing on quality in education the study also adopted the class size theory to explain the effects of class size effects on student engagement and engagement.

1.5.1 Structural-historical theory

The structural-historical theory of higher education is based on the transition of access in higher education from elite, mass, and universal access (Bakasa, 2011). In a deterministic form of transformation, higher education transitions from elite to mass higher education when enrolment exceeded 15 per cent of the relevant age group, and from mass to universal higher education when it exceeded 50 per cent. This theory states that the fundamental change from elite to mass does not only mean a sharp increase in the number of people accessing higher education but a change in quality (Machika et al., 2014). Quality refers to the change of educational concepts, expansion of education functions, and the learning environment (Xiangyang, 2009). When applied to teaching and learning, it emphasizes education as a service that is provided to students, who are customers (Lin, 2010).

There has been an irreversible shift towards wider access and increased levels of participation in higher education. Almost all systems are now mass systems, at any rate in quantitative terms. This expansion has continued despite concerns about its potential impact on academic quality and standards and budgetary constraints (Tlali et al., 2019). The first concern has been answered by evidence of rising standards, especially in research; mass systems have proved to be substantially more powerful and productive than the elite university systems of the past (Tlali et al., 2019). This theory postulates that educational quality in higher education is a complex concept of different aspects, higher education no longer exists in separation, and there is a closer link between its components and the wider society that it is meant to serve (Machika et al., 2014). Viewing the wider society as a stakeholder, the theory asserts that, students, their parents, and the society being served are involved in the assessment of higher education quality (Tight, 2019). Consequently, structural-historical theory opines the necessity for continuous monitoring, and evaluation to ascertain quality. Although the theory focuses on higher education in developed countries, it reflects the concept of massification in developing countries to an extent (Mve, 2021). Figure 1.1 displays the massification of higher education phenomenon in terms of its main causes and implications.

Figure 1.1: Trow's Conception of Elite, Mass, and Universal Higher Education



Source: Mve (2021)

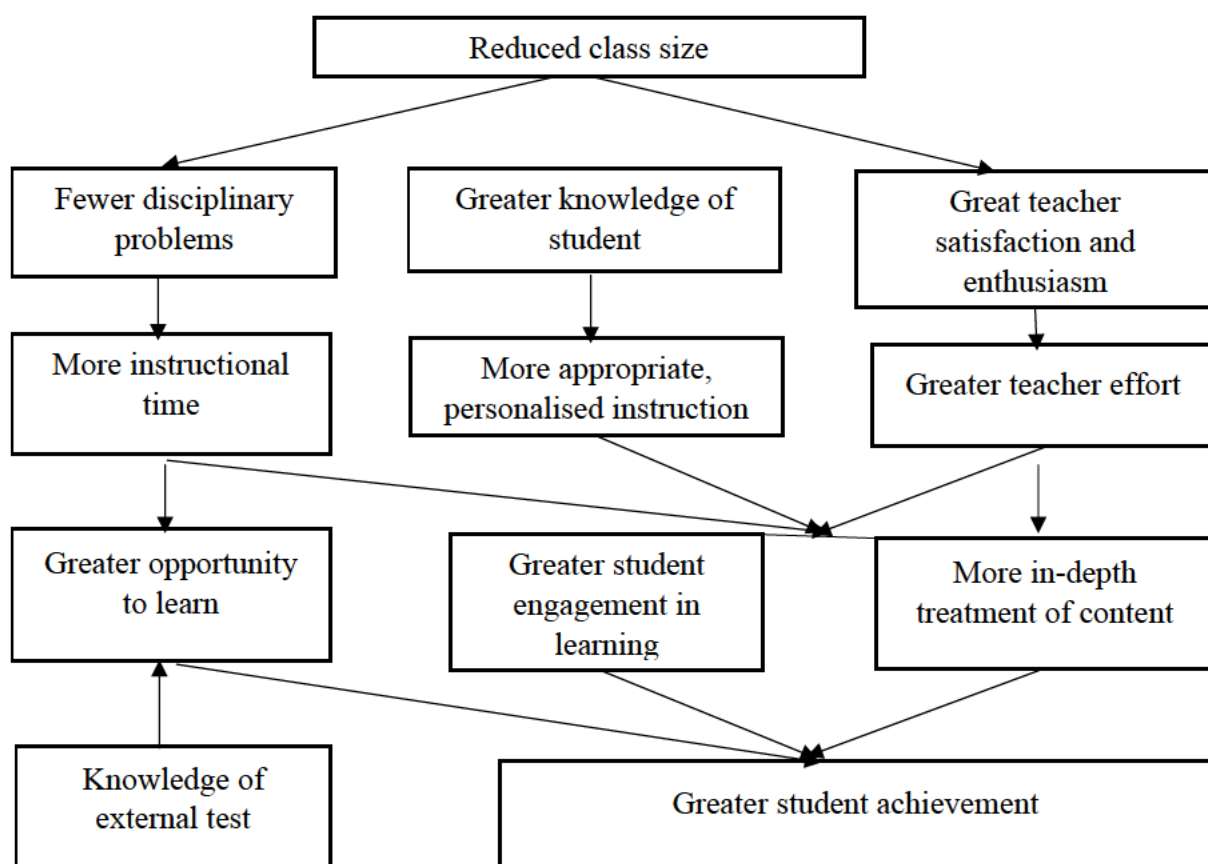
Structural-historical theory is important to this study as it seeks to understand how class size affects the quality of learning as evaluated through customer (students) expectations and perceptions. In Martin Trow's tripartite typology of higher education systems depicted in the above figure, the elite system is described as the system that enrolled between 0 per cent and 15 per cent of higher school graduates, whereas the universal system is one that enrolled more than half of the country's higher school graduates (Hanushek & Woessmann, 2008). A mass system achieves between 15 per cent and 50 per cent enrolment of higher school graduates. The distinguishing feature of the elite system is that access is only afforded to the privileged and those of high talent, whereas in the mass systems, access is afforded to those who qualify. Lastly, in the universal system, access is open to all as higher education becomes obligatory (Trow, 1973; Quintero-Re, 2011).

1.5.2 Class size theory

This theoretical model is based on the relationship between class size and achievement, based on the assumption that a teacher adjusts the style and pace of a lesson to the least able student in the class (Preece, 1987). The model is of the view that the relationship between achievement and class size is independent of the age and ability of the students and the achievement test used (Hartfitt & Tsui, 2015). A simple extension of the model also accounts for the

contradictory findings relating to the duration of instruction, but above all, there is a substantial correlation (0.62) between predicted and empirical effect sizes (Preece, 2015). The model is based on the simple premise that in smaller classes teaching is adjusted to the ability of the least able student in the class, and it follows that smaller classes offer more instructional time (Hartfitt & Tsui, 2015). Figure 1.2 below shows how reduced class size affects student achievement. The theory is key to this study as it measures how class size affects student performance as measured through their achievements. Achievements can be measured qualitatively in areas such as the extent of lecturer-student and student-student interactions, the ability of students to work within a group, and the student's self-ratings on how they understand the lessons relative to class size. For this study, the theory will help identify factors affecting students in large classes, it will be used to explain the relationships between class size and classroom activities such as student participation in the class and classroom interactions.

Figure 1.2: Class size theory



Source: Filges, Sonne-Schmidt and Nielsen (2018)

1.6 Organisation of the study

This study is organised into five chapters. The first chapter introduces the topic and provides relevant background information on the same. It is prefaced by a brief discussion of class size and different views of what constitutes a large class and provides the motivation for the study and the objectives. This part of the study also gives context for understanding the quest for widening access to higher education from a historical perspective. The second chapter provides an overview of the literature which focuses on the link between class size and the achievement made by the students in either larger or smaller class sizes. Chapter three discusses the methodology used in the study. The participants are introduced and entry into the research domain is established. Details of the interviews that were conducted and undertaken are explored. This chapter analyses the research questions and outlines the paradigms within which the research is conducted. It also details the variety of qualitative methods brought together to answer all the questions that this research raises. Chapter four discusses the data and findings of the study. It presents data thematically and analyses the results. Chapter five provides the discussion, conclusion, and recommendations for the study.

Chapter 2

Literature Review

2.1 Introduction

This chapter reviews the literature on class size and its implications for teaching and learning. Through the review of literature, the intention is to gain a better insight into the increase in class size, the reasons, consequences, and dilemmas, and above all, the strategies used by students and lecturers to adapt to a large class size teaching and learning environment. The first section focuses on the emergence of large classes, exploring the reasons for increasing class size in higher education. The second section focuses on unpacking the challenges of large class size since it is one of the most important factors with the potential to determine how much is learned. The third section discusses the relationship between class size and student achievement because there is still no clear consensus among researchers on the effectiveness of small class sizes in improving student achievement. Lastly, the chapter looks at student engagement in large classes.

2.2 Emergence of large classes

Economies across the world are continuously shifting from money-based to knowledge-based, and this has led to masses of people accessing higher education (Tewari & Ilesanmi, 2020). There is an increasing acknowledgement across the world that knowledge is a source of a nation's wealth, therefore accessing higher education goes beyond individual gains (Abugre, 2018). Higher education institutions have become more relevant in producing skills in response to development needs (Kaliisa & Picard, 2017). The expansion of post-secondary education can be traced back to the end of the Second World War, and post-secondary education participation has increased in almost every country since World War two (Lee, 2017). Internationally, the growth of higher education in proportional terms has been sharper than that of basic education (Lee, 2017). Revisiting Martin Trow's explanation of higher education transition, the study adopts the same explanation, about how higher education transitions from elite to mass and reaches the stage of universal higher education. Massification of education

has led to a large number of young and older people matriculating and obtaining access to South African institutions of higher learning (Badat, 2010). Internationally, countries like the United States of America had more than thirty percent of relevant age groups enrolled in institutions of higher learning post-second world war (Blatchford, 2012). In the same period, European countries are said to have reached and maintained universal higher education systems (Bakasa, 2011). The expansion of higher education in North America remains stable to date (Akulu, 2016). According to Chomacho et al. (2017), the expansion in developing and middle-income countries remains relatively high. Globally, many countries have experienced rapid higher education expansion but African higher education expansion specifically in Sub-Saharan Africa remains relatively lower than the rest of the world (Bakasa, 2011; Glewwe, Maiga, & Zheng, 2014; Hayward & Ncayiyana, 2014). Akulu (2016) argues that expansion in African higher education has led to a drop in governments' per-student expenditure, which in turn, has meant a deterioration in the quality of higher education.

There are several reasons for higher education expansion, and the primary causes for such expansion are changes in societies, economies, and development needs. Tewari and Ilesnmi (2020) attribute the expansion of higher education to the unfolding knowledge society that is reshaping higher education across the world. There is a common belief that education is the vehicle for development (Teise & le Roux, 2016; Tewari, 2016). As societies embrace a knowledge-based economy, higher education has become more relevant (Tewari & Ilesanmi, 2020). According to Tewari (2016), a university degree and post-secondary education certificate are now a requirement to access employment and rise to positions of a higher power. Developmental needs now demand an increasingly diversified range of skills that can only be obtained in higher education institutions (Badat, 2010). In the South African context, higher education has become a relevant means to address poverty and inequality and redress the legacy of apartheid (Cloete, Bailey & Maassen, 2015; Mouton, Louw & Strydom, 2012). The Department of Higher Education and Training in one of its objectives states that they aim to "increase the rate at which the key skills necessary for economic growth and social development are delivered" (Department of Higher education and Training (DHET), 2017). This highlights the importance of the role of higher education in socio-economic development in South Africa.

2.3 Benefits of large classes

Some theorists agree that larger class sizes can be beneficial to greater pedagogical development and will result in higher achievement if properly harnessed. Boboy (2017) argues that initial learning should be contextualised and therefore emanate from familiar ground. Boboy (2017) believes that it is possible to initiate learners at the tertiary level into looking beyond the confines of the class and use their cognitive capacities to strengthen learning. In this regard, Boboy (2017, p. 25) introduces the notion of “context-embedded” and “cognitively-demanding” performance tasks in promoting learning at HEI’s. This means facilitators in higher education must, as part of their pedagogy, start from prior knowledge, to give their students access to disciplinary discourse.

A study conducted in the United States of America that examined the effectiveness of teaching methods for overcrowded classes, revealed that higher education institutions were experiencing rapid growth in student enrolments across the United States (Carpenter, 2006). The results revealed that both students and lecturers preferred smaller classes, and the lecturer/discussion teaching method is the most favoured by students. Mulryan-Kyne (2010) states that students prefer to be active in the learning process and this promotes student engagement. A study conducted by Koenig et al. (2015) confirmed that students prefer to be taught in smaller classes. Students reported high levels of attention, a better learning environment, and lower levels of disruption as reasons they favoured smaller class sizes (Koenig, Lewis, & Martin, 2015).

Not enough consideration has been given to the advantages and opportunities that are presented by large class sizes (Ding & Lehrer, 2010). Jawitz (2011) argues that large classes are more suited for collaboration, it allows a student to master techniques by engaging many people at the same time. Furthermore, large classes are more suitable to provide an overview of the discipline and concepts that students are required to understand (De Paola, Ponzo & Vincenzo, 2013). Large classes can afford students with experiences that can help them explore the link between course material, their own lives, and the challenges faced by the broader society (Emerson, English & McGoldrick, 2018). According to Gleason (2012), the key strength of large classes is that they offer an opportunity to exploit social dimensions in the classroom and they also offer a significant advantage in terms of economies of scale. Boboy (2017) argues that learning is a matter of extending one’s current abilities through interacting with others to

achieve what one could not when working alone. Gleason (2012) stresses the undisputed fact that others enhance learning by providing collegiality and companionship. Examples have been cited of children from the royal and other rich families opting for conventional learning rather than private tutors as they are equally in search of the collegiality that comes with numbers (Ajayi, Audu & Ajayi, 2017). However, determining the optimal student number to ensure that this process is fruitful is the key to the conundrum of this research.

In larger classes, there is a greater social dimension for lecturers to exploit for teaching and learning purposes. From a lecturer's perspective, large classes provide an opportunity to construct lectures as important, not to be missed events, and to draw on the energy and emotion associated with large gatherings to facilitate learning (Guhn, Emerson & Gouzouasis, 2020). In a study by Jawitz (2011, p.7) participants revealed that they benefitted from large class sizes, Wolfman (2002) shares a similar view, in which he calls on lecturers to "turn this atmosphere to pedagogical use". By cultivating some sense of belonging in a large community of students, a lecturer can feed into the need of each student to be a part of something significant (Almulla, 2015). Large classes allow lecturers to exploit the diversity among students in terms of gender, race, and class, which are more prevalent in larger classes than in smaller classes (Emerson, English & McGoldrick, 2018). In a large class, there are clusters of students from a wide range of backgrounds, experiences, learning styles, and problem-solving skills, which are valuable resources for lectures (Hayward & Ncayiyana, 2014).

When a single lecturer is simultaneously providing a learning experience to many students in (or from) a single venue it means resources can be efficiently stretched and optimally utilised (Cash, Letargo & Jacobs, 2017; Saiz, 2014). This presents an opportunity to save significantly in terms of costs, time, and effort spent in the preparation of lectures, communicating with students, preparing, and distributing information and resource documents, and the setting and distribution of tasks and assignments (Saiz, 2014). Investing in new technologies, including multimedia presentation technology, and learning management systems such as Blackboard, can provide significant learning experiences to large numbers of students at the same time (Saiz, 2014). Podcasting and video recording technologies allow students to review what happened in class, while the use of mobile response technology, such as clickers, can facilitate interactive learning during lectures (Herbert, Velan, Pryor & Kumar, 2017). In addition, setting tasks and assessments for a single large class, and sharing the marking of these tasks among support staff, is easier to manage and control than having a lecturer set and mark different tasks

and assignments with different criteria across several smaller courses (Jawitz, 2013). The number of students served by a large course, which translates into significant income earned by the department, should justify the expenditure on the technology and additional support staff required to exploit these opportunities (Boehm, 2021). Large classes in certain disciplines are often justified in terms of economies of scale to cross-subsidise other disciplines or postgraduate studies, which require more intensive small group tuition (Zheng & Warschaure, 2015).

2.4 Challenges of large class sizes

There are numerous studies conducted to examine the impact of large classes on teaching and learning at post-secondary education institutions (Lloyd-Strovas, 2015; Moodley, 2015; Hornsby, Osman & De Matos Ala, 2013; Mulryan-Kyne, 2010). Class size is one of the most important factors in the teaching and learning process, it has the potential to determine how much is learned (Gakure & Kithae, 2013). For example, the level of social engagement that can lead to noisy and disruptive behaviour is often associated with large class size, while on the other hand; many studies have revealed that smaller classes tend to perform better on all kinds of assessments as compared to large classes (Bruhwiler & Blatchford, 2011; Chingos, 2013; Muya, 2016). According to Machika et al. (2014), the challenges of large classes relate to size, academic performance, student engagement, teaching and learning problems, and physical aspects. The bulk of the studies shows that problems associated with large classes include many facets of teaching and learning. According to Matoti and Lenong (2018) central to the problems in large classes is the conflict between the large class format and the learning goals, which often leads to unwanted consequences because students lack motivation. Also contributing are students' unpreparedness for the large class format, lack of accountability in student classroom behaviour, inadequate facilities, and lack of accessibility and personalisation (Mulei, Waita, Mueni, Mutune & Kalai, 2016).

While learning goals may require students to be involved and take part in classroom activities, a large class format forces a lecturer to spend more time on classroom management hence decreasing time spent on active learning (Parks-Stamm, Zafonte & Palenque, 2016). Student participation is associated with positive outcomes for student achievement; however, research findings on the effect of class size on student participation are mixed (Zheng & Warschaure, 2015). In a study conducted by Parks-Stamm et al. (2016), it was revealed that both class size

and instructor participation had significant effects on student participation. Large classes can also have barriers to entry for underrepresented groups in the classroom such as women, students who do not use English or the medium of instruction as a first language, and more introverted or nervous (Majid, Yang, Lei & Haoran, 2014).

Blatchford (2012) states that the history of class size involves ‘three generations of research’ that/ is, the first generation is predominantly about the impact of class size on pupil academic achievement, while the second generation focuses on the effects of class size on classroom activities (Blatchford, 2012). The third generation of research is concerned with teaching approaches required for both small and large classes (Blatchford & Russell, 2018). This framework is adopted for the next sections of this chapter.

2.4.1 International perspective on large classes

Large class size is one of the challenges in higher education that both developing and developed countries have been grappling with since the beginning of the massification trend in the education sector across the world (Yelkperi, Namale, Esia-Donko & Ofosu-Dwameng, 2012). In Ghana, Yelkperi et al. (2012) conducted a study that analysed the views of students and lecturers on large class sizes and how they affected teaching and learning at the University of Education Winneba. Like most Sub-Saharan African countries, Ghana has been grappling with the problem of large classes in institutes of higher learning (Blatchford, Bassett & Brown, 2011; Yelkperi, Namale, Esia-Donko & Ofosu-Dwameng, 2012). One of the key findings in the study was that students felt that large classes did not give lecturers sufficient time to pay attention to struggling students and time to do remedial teaching (Yelkperi, Namale, Esia-Donko & Ofosu-Dwameng, 2012). In Canada, Cash et al. (2017) examined perceptions and resources of large classes and concluded that between 2001 and 2011 enrolment had increased by fifty per cent, and the large class can mean having about 240 students in one seating in Canadian higher education. The results further revealed that there were minimal interactions between students and instructors in large classes (Cash, Letargo & Jacobs, 2017). Furthermore, the study concluded that class size reduction needs adjustments by instructors to be effective. In England, it was found that there was a connection between time spent on teaching and the number of students in the class (Blatchford et al., 2011). As explained by the class size theory, the higher the number of students in the class, the lesser opportunities to learn. The study

concluded that in a large class, more time was spent on non-teaching activities such as classroom management (Blatchford, Bassett & Brown, 2011).

2.4.2 South African perspective on large classes

Large classes are not a new phenomenon in South African institutions of higher learning just like in most developing countries. South Africa has its fair share of large class size challenges (Abugre, 2018; Baruth, 2009; Beattie & Thiele, 2016). Large classes pose challenges for teaching and learning (Moodley, 2015; Hornsby et al, 2013; Jaffer et al, 2007). A study conducted by Onwu and Stoffel (2005) in Limpopo province of South Africa, showed that even at the school level large class size is experienced. The study revealed that amongst the problems experienced in large classes are inadequate facilities, teachers not properly trained to teach in large classes, and underqualified teachers (Onwu & Stoffel, 2005). It was shown in the study that the 53 teachers who participated in the study taught large classes and the class size continued to increase each year. The classes were overcrowded, they ended up resorting to instructional functions, mainly lecturing (Onwu & Stoffel, 2005). It was further revealed that there was no extra reward for teaching large classes hence the teachers were not motivated. While the study was at the school level and focused mainly on under-resourced science classes at schools, it revealed that the challenge of large classes starts at the school level. Matoti and Lenong (2018) argue that the challenge of large classes emanates from lower grades in schools and leads to large intakes of first-year students at institutions of higher learning. The scholars further suggest that lecturers need to devise effective strategies to promote and sustain student participation and engagement in large classes (Matoti & Lenong, 2018).

A study conducted by Moodley (2015) to examine the challenges experienced by lecturers in large classes at higher education institutions revealed several challenges associated with large classes. The study was done at two South African universities, that is, the University of Limpopo, and the University of Zululand, and concluded that large classes were most prevalent in introductory courses across faculties (Moodley, 2015). The investigation revealed that both students and lecturers preferred smaller class sizes to large classes. Moodley (2015) further states that lecturers preferred multiple-choice assessment questions to avoid a large volume of marking which is associated with large classes. Simultaneously students felt that individual assignments that include writing essays took longer to get feedback from the markers. Due to

these findings, it was revealed that students and lecturers favoured small classes, and in those classes, there is high student engagement and participation which leads to active learning (Wood & Tanner, 2012; Majid, Yang, Lei & Haoran, 2014).

A study conducted by Matoti and Lenong (2018) at the Central University of Technology in the Free State Province, South Africa revealed that participation of students and engagement are negatively affected by large class sizes. Matoti and Lenong (2018) reviewed that large classes are frequent in introductory courses which are mainly attended by first-year students. Similar findings were made by Cash et al. (2017) who argued that there is evidence that enrolments are increasing across undergraduate studies. Matoti and Lenong (2018) state that in these studies, lecturers opted for traditional lecture methods of teaching, which entail PowerPoint presentations and minimal or no student involvement. It is further argued that such teaching methods may not be proper for first-year students who are transitioning from school to tertiary education (Matoti & Lenong, 2018).

2.4.3 Students' perspectives on large classes

Koenig et al (2015) conducted a study investigating student class size preferences and the study revealed that students prefer smaller classes. In the interviews conducted, students indicated that they preferred small class sizes because of the high levels of attention they received from lecturers and the learning environment that provided low levels of disruptions (Koenig, Lewis & Martin, 2015). Similar observations were made by Cash et al (2017) when analysing student perceptions of large classes and concluded that instructor-student interactions were limited in large classes. Furthermore, the study showed that lecturers spent more time on classroom management in large classes as compared to smaller classes (Cash et al., 2017). A study by Moodley (2015) revealed that both lecturers and students favoured small class sizes. Students blamed lecturers because they did not possess the right skills to lecture in a large class environment. Secondly, large class environments affected lecturers' accessibility to students (Moodley, 2015). Similar observations were made by Matoti and Lenong (2018) in their study which revealed that a large class environment provides limited interactions between students and lecturers, inadequate classroom facilities, and there are disruptions. Also, the time to get feedback was unpleasantly longer in larger classes, and these classes did not provide opportunities to participate in classroom activities (Matoti & Lenong, 2018).

While numerous studies have revealed that increasing class size has a negative impact on direct measures of learning (Bandiera, Larcinese & Rusul, 2010; Kogl, McFall & ML, 2016), some studies argue that large class size has no effects (De Paola, Ponzio & Vincenzo, 2013; Gleason, 2012; Matta, Guzman & Stockly, 2015; Olson, Cooper & Loughheed, 2011). However, there is common agreement amongst researchers that students perceive an improved learning experience in smaller classes (Muya, 2016). For instance, course evaluations show that students tend to give higher ratings to lecturers and courses when classes are smaller (Benton & Cashin, 2012; Mandel & Süßmuth, 2011; Monks & Schmidt, 2011; Sapelli & Illanes, 2016). Studies reveal that there is a consensus among students that the quality of learning improves in small classes (Benton & Pallet, 2013; Monks & Schmidt, 2011). Gleason (2012) reiterates that students in smaller classes learn more and tend to have a more positive attitude toward the discipline than those in large classes. Monks and Schmidt (2011) in hypothesizing reasons why lecturers tend to use teaching methods that suit active learning in smaller classes found that students receive more individual attention in a smaller class size environment. Evidence from previous studies suggests that students experience feelings of anonymity and were too nervous to participate in classroom activities when a class is large (Howard, 2015). Similarly, lecturers find it difficult to form relationships with students in a large class size setting (Hartfitt, 2012).

2.4.4 Lecturers' perspectives on large classes

According to numerous studies conducted, it shows that small class size allows for better quality teaching, more individualised attention to students, and high student success (Bakasa, 2011; Balestra & Backes-Gellner, 2014; Baruth, 2009; Blatchford & Russell, 2018). A dominant narrative is that large class size constrains teaching approaches that can be utilised, to the detriment of student learning and teacher satisfaction (Ding & Lehrer, 2010). A 2009 survey conducted in England by the Association of Teachers and Lecturers (ATL), found that most teachers thought the number of students in the class was important and a low student-teacher ratio was good for teaching and learning. Furthermore, teachers felt that large classes negatively affected students' concentration, participation, and teachers' satisfaction (Koenig, Lewis & Martin, 2015). A study was conducted in Saudi Arabia, to determine whether a difference in the number of students in the class could have an impact on teachers' perceptions and teaching practices (Almulla, 2015). Teachers reported that class size affected their teaching. Teachers of large classes reported that a large class size environment limited the range of teaching methods they could use, and they opted for more teacher-centred teaching methods.

The study revealed that there were several barriers and difficulties associated with a large class environment including decreased lesson time since teachers spend more time managing students' behaviour and assessment of students' performance (Almulla, 2015). Lowenthal et al. (2019) argue that large class size is a concern to most lecturers because they believe that it influences student learning and engagement. As the number of students in the class increases, students' interactions with lecturers decrease, and therefore students' learning decreases (Lowenthal, Nylanda, Junga, Dunlapb & Kepkac, 2019).

According to Matoti and Lenong (2018), most lecturers prefer to teach in small classes and the lecture/discussion teaching method is the most effective because it encouraged students to be active in their learning (Ajayi, Audu & Ajayi, 2017; Hornsby, Osman & De Matos Ala, 2013; Jawitz, 2013). According to Lloyd-Strovo (2015), a combination of discussion and lecture teaching methods are the most powerful tools to promote student participation and engagement. Matoti and Lenong (2018) used qualitative research methods in their study to analyse student and lecturer experiences in large classes. The study revealed that lecturers regarded a classroom with more than 50 students as large and they preferred to teach less than 50 students in one seating (Matoti & Lenong, 2018). The responses revealed that large classes pose several challenges to lecturers. The most cited challenges posed by large classes on lecturers include resource constraints due to overcrowding, low attendance, and students' anonymity (Matoti & Lenong, 2018). There was consensus that students were part of the problem because the lack of discipline on students' part results in more time spent on classroom management (Matoti & Lenong, 2018). Students attending large classes are often not prepared for these large class formats and this is attributed to a lack of motivation which is identified as the major obstacle when dealing with large classes (Sapelli & Illanes, 2016). Similar observations were made in a study conducted which concluded that large classes have a negative impact, on the quality of teaching (Wood & Turner, 2012). According to Wood and Turner (2012), active learning is limited in large classes, they do not promote student engagement and involvement in the classroom. Jawitz (2011) cites that student involvement and engagement are crucial for active learning to take place.

To understand how class size can affect teaching, Harfitt and Tsui (2015) provided a hypothetical example by suggesting that if a lecturer has five classes with 20 students in each class, the lecturer is responsible for 100 students. If each class is increased to 30 students, the lecturer would then be responsible for 150 students – which is a 50 per cent increase in the

teaching workload (Harfitt & Tsui, 2015). If a lecturer with 20 students in each class spends only 15 minutes reading, analysing, and responding to a writing assignment (a short amount of time), the lecturer will have to devote 300 minutes to the process for each class – or about five hours – while five classes given writing assignments would require 25 hours (Harfitt & Tsui, 2015). For a lecturer with 150 students, the time required would be 2,250 minutes – or nearly a full 40-hour workweek. So, if the lecturer gave one writing assignment a week in each class, the time required to teach the course and score the writing assignments would likely be between 65 and 80 hours, depending on class sizes. This example illustrates that at a certain point, class size will affect the instructional options available to teachers, since the demands of lesson preparation, teaching duties, and assignment grading can quickly become unmanageable as class sizes increase. The more students that teachers have, the more likely it is that they will have to rely on instructional methods that require less time to complete, such as grading short-answer worksheets or scoring multiple-choice tests.

2.5 Class size and student achievement

Despite class size being one of the most researched educational topics, there is still no clear agreement among researchers on the effectiveness of small class sizes in improving student achievement (Moodley, 2015). Some studies have pointed to small and insignificant effects of small class size while other studies point to positive and significant effects on student achievement of small class size (Leufer, 2012; Moodley, 2015). One of the most cited class size research studies is an early meta-analysis by Glass and Smith in 1979, it analysed the outcomes of 77 studies including 725 comparisons between small and large class size on achievement (Hanushek & Woessmann, 2008). Hanushek and Woessmann (2008) reanalysed Glass and Smith's data using different statistical methods, contrary to Glass and Smith's findings, Hanushek and Woessmann found that the differences were insignificant. There is conflicting evidence from studies about the significance of class size differences and their impact on student achievement as some based their conclusion on non-experimental evidence. According to Bruhwiler and Blatchford (2011) appropriateness of different specifications and assumptions also accounts for the inconsistency in the results of studies.

Hanushek & Woessmann (2017, p. 50) state that “class size, cannot influence academic achievement directly but must influence what teachers and students do in the classroom first before it possibly affects student learning”. Investigating the relationship between class size

and student achievement, Anderson (2000) focused on the question of why smaller class sizes should be expected to enhance student achievement. According to Anderson's model, class size has an indirect effect on student achievement through disciplinary problems, knowledge of student and teacher satisfaction, and enthusiasm. These are variables that have a direct effect on the amount of time spent teaching and learning activities, the teaching and learning opportunities, and teacher effort respectively (Balestra & Backes-Gellner, 2014). The model predicts that increasing instruction time, individualised instruction, and teacher effort has the potential to produce greater student engagement. According to Exeter et al. (2010), the level of student engagement is operationalised as the amount of time spent by a student on his or her learning activities. In light of these explanations, a smaller class size affords teachers and students more time for teaching and learning activities. A student who devotes more time to learning activities is more likely to achieve higher learning results (Bettinger, Doss, Loeb, Rogers & Taylor, 2017). This suggests that smaller classes are indirectly related to higher student achievement.

Most research studies found that smaller class sizes could have positive effects on student learning and academic achievement, and many initiatives at the level of the state, policy, and individual institutions sought to lower student-teacher ratios. Beattie and Thiele (2016) argue that the rationale behind this is that if lecturers have fewer students, they can dedicate more time and attention to each student, including more time, diagnosing specific learning needs, critiquing work products, and giving students one-on-one instruction and academic support.

Hanushek and Woessmann (2017) believe that school districts would do better if they hire fewer teachers with good quality credentials than to hire more teachers without regard to the level of credentials and experience. The quality of the teacher, rather than the size of the class, drives student achievement. In short, the stakes are high when undertaking these initiatives since endless debates continue to rage about the ability of reduced class size to fuel student achievement, making it critical to approach the issue armed with credible research that helps inform decision-making. Bowne et al. (2017) performed a meta-analysis on the outcomes of 77 studies that included 725 comparisons between a smaller and a larger class on the measure of achievement. The research involved studying various class sizes to ascertain the extent to which class size affected the performance of learners. The two researchers found that 60% of the comparisons favoured the smaller class. First, it should be noted that the effect of class size appeared to grow as the size was reduced, for example, a reduction from 10 to 5 students

yielded better results than a reduction of 30 to 25. Bowne et al. (2017) also noted that the connection between class size and achievement did not change significantly for students of different ages or different ability levels.

However, Bowne et al. (2017) findings were criticised by other researchers notably, Blatchford and Russell (2019). Blatchford and Russell (2019) argue that Bowne et al. (2017) were influenced by studies of tutoring and not class size and the report does not make a clear distinction between teaching and tutoring classes. Bowne et al. (2017) found that small class size benefits students regardless of their intelligence level, as some of them had been graded according to achievement level. Bowne et al. (2017) believe that smaller class sizes are associated with greater individualisation and informality, higher quality of instruction, and a more positive school climate. They form three categories into which the broader variables can neatly fit, and these are teacher consequences, students' consequences, and classroom instruction. Hanushek and Woessmann (2017) concur with Bowne et al. (2017) and refer to these three categories as behaviour management, individualisation, and curriculum. Hanushek and Woessmann (2017, p. 160) add that smaller classes make discipline easier, because "you spend more time teaching and less time policing".

Habibi et al. (2018) in an in-depth analysis of what happens in a classroom when class size increases found that there are certain consistent consequences across differing class sizes. Cahenet et al. (1983) like Hanushek and Woessmann (2017), identified the same three categories namely behaviour management, individualisation, and curriculum. Educators felt that smaller classes make discipline easier. This perception was from observational data that indicated that students give closer attention when class size was reduced. Attention was also enhanced in class discussions because fewer students were lost in the crowd and all students had frequent opportunities to participate. The educator also had frequent opportunities to maintain eye contact with every learner with a sweeping stare. Habibi et al. (2018, p.21) speculated that the effect on participation might be more pronounced for low achievers and at-risk students because:

"In a small group, where control is perceived to be easier, the educator may feel she can take time to draw all students into the discussion rather than rely on volunteers or high achievers to keep things moving along."

Habibi et al. (2018) also concluded that although the curriculum was primarily determined by textbooks and remained unchanged by class size, teachers were able to cover it more effectively. A connection between smaller classes and school success is supported by these three theories of learning: Gagne's conditions of learning, Gibbon's model-centred instruction, and Ryan and Deci's self-determination theories (Cohen-Vogel & Fierro, 2019). These theories posit that when the social context supports self-determination, integration tends to occur, whereas, when the context does not support self-determination, introjections tend to occur (Habibi et al., 2018). This means students internalise material that they perceive to be useful regardless of interest levels. Boboy (2017, p. 25) defines and explains learning and achievement through the development of concepts as highly relevant to students, arguing that there are two recognizable levels of achievement. First is the level of achievement that has already been attained and can be demonstrated independently by the learner in question, which is referred to as the "actual development level". Second is the "potential level of achievement" that an individual can attain when working with either guidance from a facilitator, or a parent or by working together with more capable peers.

Previous research indicates that class size is equally insignificant for students from different races, ethnic, economic, and academic backgrounds (Hanushek & Woessmann, 2017). When learners first come to HEI's, they encounter changes, and some get confused. Learners come into this new setting with different backgrounds from their homes and circumstances. Many need training in paying attention, carrying out tasks, and interacting with others in a working situation. Some need to learn how to cooperate with others, learn to listen and understand, and generally get oriented to being tertiary students. These observations fit neatly with several current theories of education, including the idea of frames and scripts. Supporting this view, research on instruction indicates that smaller class sizes probably realise their positive outcomes on achievement through a variety of mechanisms (Alber, 2014). Small class size is not a panacea to all educational woes. Reducing class size is a significant means of improving student achievement, but it is not the only factor. High academic standards and a challenging curriculum, more student-on-task behaviour, greater individualisation, and a safe, as well as orderly classroom with qualified teachers, are no less significant in the arsenal of solid research-proven reforms (Macias, 2018). When smaller class size is pursued in conjunction with these standards-based reforms, the combined impact on student achievement is far greater than either strategy alone.

2.6 Effects of large classes on student engagement

The number of students in class is a concern for policymakers and those involved in higher education. Studies conducted on class size effects on teaching and learning have suggested that large classes lead to higher dropout rates, lower attendance, cheating, and decreased breadth and depth of the subject matter. It also results in fewer lecturer-student interactions, limited lecturer feedback, increased reliance on the lecturer, and less student participation in class (Mitchell, Leachman & Masterson, 2017; Russell & Curtis, 2013; Saiz, 2014). While policymakers are concerned with widening access to and increasing participation in higher education, there remain recurring concerns about student success and the overall quality of higher education (Chen, Lowenthal & Bauer, 2016). Frequently, studies identify large class sizes as problematic for student engagement, because engagement decreases as class size increases (Blatchford et al., 2011). According to the Australian Council of Educational Research (2010), student engagement is defined as the time and effort that students dedicate to education activities (Australian Council for Education, 2010). Student engagement describes students' devotion to their education; it includes student involvement and participation throughout the teaching and learning process (Harding, 2018). The teaching and learning environment includes interaction with instructors, peers, the curriculum, and the instruction itself (Boehm, 2021).

Higher education research suggests that student engagement is one of the key indicators to determining whether a student will graduate or not (Enright & Refinetti, 2017). Furthermore, when student attributes such as background characteristics are controlled, student engagement becomes a predictor of student success and satisfaction (Exeter, Ratima & Morton, 2010). Student engagement in its crude or broadest definition refers to the amount of time, effort, energy, and resources a student spends on activities to enhance his or her learning (Trammell & LaForge, 2017). Krause (2007) identified three types of environment in which students can become engaged with their learning: (i) in the classroom during the lecture, by being involved in study-related activities; (ii) by participating in out-of-class activities such as study groups or tutorial classes, and (iii) in a skill-based employment training (Lewin & Mawoyo, 2014). According to Kumaraswamy (2019), an engaged student is a 'deep' learner, looking to develop his or her knowledge, reflecting on the facts and details presented in the classroom and relating them to their own experiences (Strydom, Kuh & Mentz, 2010). While a disengaged student typically takes notes in class and memorises key points just to obtain a 'pass' in the course

(Exeter, Ratima & Morton, 2010). These arguments suggest that student engagement has to do with the time and effort that students invest in their studies, and the interaction with the teaching and learning environment (Towler, 2020). Hanushek and Woessmann (2017) stated that student engagement can be broken down into three dimensions, namely, behavioural, emotional, and cognitive. Behavioural engagement has to do with students' observance of rules, such as adherence to class rules and being undistruptive during classroom activities (Australian Council for Educational Research, 2010; Mitchell, Leachman & Masterson, 2017). Emotional engagement refers to a student being engaged emotionally with peers and teachers; it includes actions such as showing empathy to others (Strydom, Kuh & Mentz, 2010). Cognitive engagement involves engaging with the study material and going beyond what is required (Nyamupangedengu, 2017).

According to Matoti and Lenong (2018) promoting student engagement is key in addressing issues like low student success, high dropout rates, and low attendance. Past research shows that there are low levels of student engagement in large classes (Moodley, 2015; Cash et al., 2017). Moodley (2015) cites that the teaching methods preferred by lecturers in large classes do not promote student engagement. This is supported by Lynch and Pappas (2017), Mohamedbhai (2014), and Harding (2018), who argue that lecturers preferred traditional lecture methods and PowerPoint presentations limit student participation and student engagement. Overcrowded classes are synonymous with disruptions and noise, for example, the free flow in class is negatively affected when lecturers continue to reprimand disruptive students (Ajayi, Audu & Ajayi, 2017). Student engagement is negatively affected by limited interactions in a large class size environment (Blatchford, Bassett & Brown, The, 2011). In a study by Moodley (2015), it was revealed that overcrowded classes inhibit student engagement and attendance. Active learning assumes that students learn effectively when they are actively involved in their learning and are asked to reflect on it, this is not the case when student attendance and engagement are low (Machika, Troskie-de Bruin & Albertyn, 2014). According to Machika et al., (2014), the interaction between students and lecturers at school makes students think like experts (lecturers) and able to solve practical problems.

2.7 Summary

The review of the literature showed that a large class size environment poses several challenges for both students and lecturers. Earlier research literature has identified certain conditions that

make large classes less conducive to learning. Such conditions include inadequate space, limited classroom interactions, disruptive behaviour, and the loss of lecture time to classroom management issues. The literature also indicated that these conditions were less prevalent in smaller classes. Upon the analysis of the literature, it is apparent that there is a real polarity of opinion on the relationship between the teaching-learning process and a large class size environment. The argument comes down to, more than anything, an issue of strategy, which is to say, how to effectively deliver the curriculum and what modes of teaching and learning will best achieve the desired outcomes. Furthermore, it is argued that large classes have come to stay, because of the unfolding knowledge society there is a shift of economies from money-based to knowledge-based and the relevance of higher education has increased the demand for higher education (Tewari & Ilesanmi, 2020). According to Bakasa (2011), in a world with expanding knowledge base, it is important to develop students with key competencies and proficiencies that will allow them to discover and synthesize knowledge, both collaboratively and on their own initiative, using all the new and powerful tools that they now have, quite literally, right at their fingertips.

Chapter 3

Research Methodology

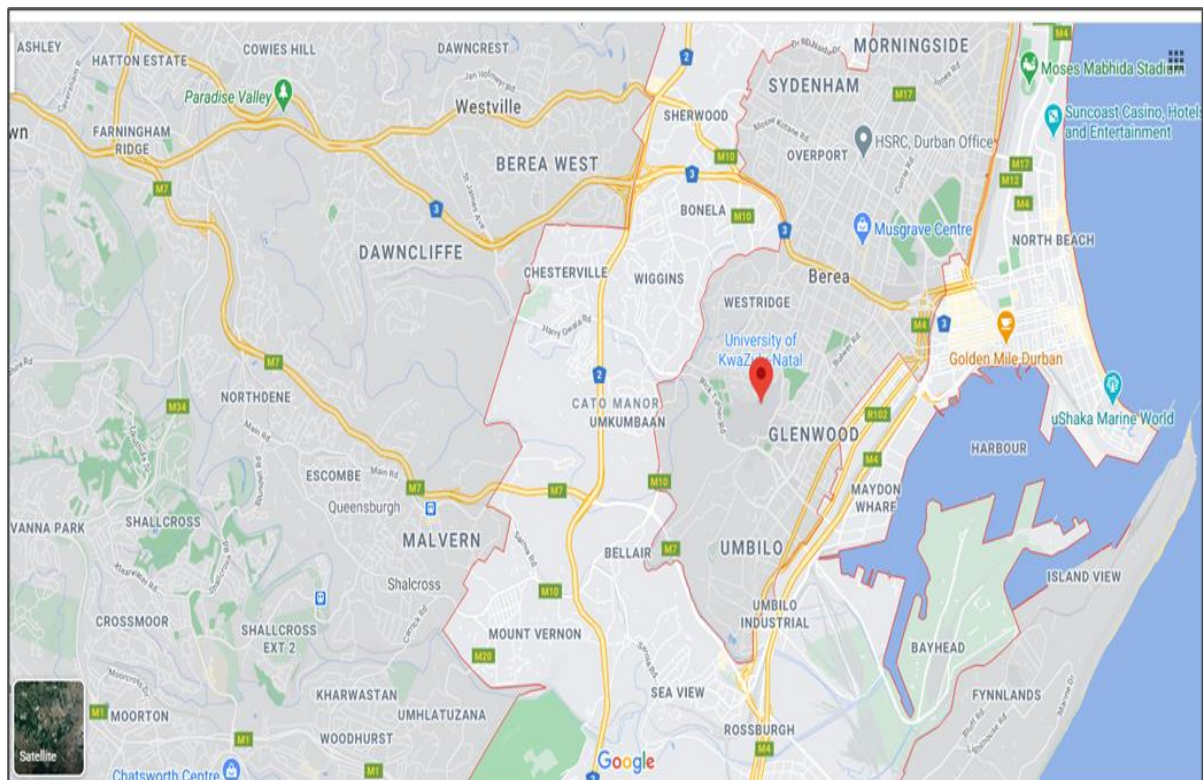
3.1 Introduction

This chapter presents a detailed account of the research methods used in different stages of the research process and justifies the logic behind the selection of the methods used. It also describes the study area and the target population. The researcher provides details of the research process in line with the initial objectives of the study. The researcher also discusses how the interpretivist paradigm was selected and employed in this study. This is followed by a description and the justification for the use of a qualitative approach in the research. The researcher describes the sampling method and why the principle of saturation was used. The chapter discusses how data was collected and analysed. It also describes how validity was ensured. Lastly, the chapter discusses ethical considerations as observed during this study.

3.2 Study area

The study was conducted in Durban, South Africa at the University of KwaZulu-Natal (UKZN), Howard College campus where large classes are of concern (Department of Higher Education and Training, 2019). UKZN has the third-largest enrolment number amongst the public higher education institutions in South Africa and the enrolment increases yearly (Department of Higher education and Training (DHET), 2017). The university recorded a student headcount of 44314 in 2021 (University of KwaZulu-Natal, 2021). Figure 3.1 shows the location of Howard College which is one of the five campuses of the University of KwaZulu-Natal. Having been opened in 1931 and named after the son of the donor Howard Davis who helped built it, the Howard College campus is situated in Berea approximately 5.6 kilometres from the Durban central business unit, it overlooks the Durban harbour (University of KwaZulu-Natal, 2021).

Figure 3.1: Map of Durban



Source: Google maps (2021)

The University of KwaZulu-Natal was formed when the University of Durban-Westville and the University of Natal merged in 2004 as part of the national restructuring of higher education in South Africa (Department of Higher Education and Training (DHET), 2014). In its institutional tagline, ‘the premier university of African scholarship’ UKZN expressed a vision that marked a significant departure from the past. The ancestor institutions are significant in the formation of UKZN as they contribute different histories that can be expressed simplistically in the nomenclature as a historically black university (HBU) and historically white university (HWU). These terms both indicate and disguise the more nuanced differences, which are clarified in White Paper 3: A Programme for the Transformation of Higher Education (Department of Education, 1997, p. 8).

“There is an inequitable distribution of access and opportunity for students and staff along the lines of race, gender, class, and geography... gross discrepancies in the participation rates of students from different population groups, indefensible imbalances in the ratios

of black and female staff compared to whites and males, and equally untenable disparities between historically black and historically white institutions in terms of facilities”.

3.3 Research paradigm and approach

The study adopted the interpretivist paradigm which holds the belief that ‘individuals seek understanding of the world in which they live and work’ (Smith, 2004; Creswell, 2013). According to Goldkuhl (2012), recognizing the subjective connotations of people in studied domains is crucial in the interpretive paradigm. The central idea of the interpretivism paradigm is to work with these subjective meanings that already exist in the social world, acknowledging their existence, reconstructing them, understanding them, avoiding distorting them, and using them as building blocks in theorizing (Kivunja, 2017). Ontologically, the interpretivism paradigm assumes that the social world is produced and reinforced by humans through actions and interactions (Goldkuhl, 2012). The ontological perspective of this paradigm is based on the belief that reality is subjective and multiple (Braun & Clarke, 2018). This study took the stance that reality can only be understood through the human mind and socially constructed meanings. The epistemological perspective of this paradigm is based on how reality is known and how knowledge is socially constructed (Alharahsheh & Pius, 2020). This study sought to construct knowledge through an interpretation of the experiences of students at UKZN. The methodological implication of this paradigm was that the understanding of an insider’s view and values are acknowledged, and subjectivity of interpretation is allowed (Creswell, 2018). Thus, the methodology employed in this study concurred with this implication which allows for interpretation.

This study used qualitative research methods, which relate to the meaning and process where measurements cannot be done using quantitative measures (Martens, 2015). Qualitative research was recognised as the utmost suitable for this study because of the understanding that it provides a better understanding of a social phenomenon and is relatively flexible (Tracy, 2010). Using qualitative methods, the researcher aimed to gauge and interpret the views of the participants. Unlike the quantitative approach, qualitative methods rely on an emic-insider view, and a qualitative researcher is defined as one who captures what people say in their world (Befani, 2013). Rather than measuring the scope and frequency, the investigator was interested in the ‘how’, ‘when’, and ‘why’ questions that were meaningful to participants. This research

approach fits the purposes of this study because it is inductive and tends to begin with specific explanations and situational analysis of the community under investigation, which is then used to produce generalized theories and conclusions (Gentles, Charles & Ploeg, 2015).

This study is exploratory, as it sought to find out which initiatives are needed to respond to challenges presented by large classes on teaching and learning and learning opportunities and what are likely impacts of such initiatives. Exploratory research is aimed at collecting as much information as possible on a specific phenomenon on which knowledge is still incomplete or not yet well known (Babbie & Mouton, 2011) This study has exploratory characteristics, it seeks to answer the question ‘what is going on’ (with classroom processes in classes), with a view of provoking the ‘why’ and ‘how’ questions (Yin, 2013).

3.4 Sampling techniques

In selecting participants, this study identified a purposive sampling procedure, which is non-probability sampling as the appropriate sampling method for this study (Gentles, Charles, & Ploeg, 2015). Purposive sampling was employed to look for study participants, who in turn gave the most complete and relevant data about the study focus. Purposive sampling “is a strategy in which particular settings, persons, or activities are selected deliberately to provide information that can't be gotten as well from other choices” (Maxwell, 2005, p. 88). Gentles, Charles and Ploeg (2015) define purposive sampling as a method of sampling where the researcher deliberately chooses who will be the research participants based on their ability to provide necessary data. The target population for the study was all students registered in Population Studies programmes in 2021. The researcher used non-probability purposive sampling to sample 12 students. The targeted sample size was 20 students, however, the final sample size of 12 students was dictated by data saturation, a point where no new information was obtained by adding more participants (O'Reilly & Parker, 2013). The student population gave their account of the relationship between class size and classroom processes in contact-based lectures.

The study considered students enrolled in postgraduate studies (Honours and Masters by coursework) in Population Studies at Howard College in UKZN in 2021 as the inclusion criteria. The exclusion criteria for the study were all Population Studies students who were not available for follow-up questions. The rationale behind the selection of these participants is the

assumption that they had good prospects of supplying relevant and factual data and could be able to reflect upon their classroom experiences throughout their participation in higher education and reflect on the gains and drawbacks caused by an increasing number of students participating in study programmes. The students were key informants in the study as the researcher aimed to exploit the advantage of purposive sampling in that it “requires the researcher to identify a specific group of people who can provide information on the problem being investigated” (Yegidis and Weinach, 1991, p. 155). The selection of purposive sampling was fundamental to the quality of data collected as well as avoiding potential bias and threats to the validity of the research conclusions (Omona, 2013). Since qualitative interviewing allows for a flexible research design where the number and the type of informants can be specified beforehand and altered as the need arises, the researcher started only with those who were assumed to be suitable interview candidates. Candidates selected through purposive sampling consisted of individuals who had been exposed to higher education and had more than twelve years of schooling.

3.5 Data collection

Babbie (2008) argues that data collection is of supreme importance as conclusions are highly dependent on the data type and quality. Since most students were doing remote learning and domiciled in different locations, the researcher used telephonic interviews, with the condition that the participants agree. The telephonic interviews were scheduled and conducted between March 2021 and September 2021. The telephonic calls took the form of WhatsApp calls which were recorded using an App recorder, the recorded audio was then transcribed verbatim into English. WhatsApp calls were preferred because they have end-end user encryption and are not subject to third-party user encroachment (Reichel et al., 2020). Interviews ranged from 27 to 56 minutes in length, the participants were also informed about the purpose of the research study or research. Upon obtaining permission to conduct research from the UKZN, the researcher posted an invitation on the UKZN notice system, Facebook forums and class WhatsApp groups inviting postgraduate students in the School of Built Environment and Development Studies, specifically those enrolled for Population Studies to partake in the study. Upon confirmation, the researcher sent invitations and consent forms via email to potential participants inviting them to participate in a telephonic interview.

The study used a semi-structured interview guide that seeks to collect qualitative data. The interview questions were divided into three themes, namely: the general attitudes and preferences regarding large classes, the effects of large classes on classroom interactions and participation and lastly, the students' experiences in large classes. This type of interview, according to Yin (2011, p. 134), has three advantageous characteristics. Firstly, there is no tightly scripted questionnaire “The researcher will have a mental framework of study questions, but the specifically verbalized questions as posed to any given participant will differ according to the context and setting of the interview”. Secondly, avoiding any ‘uniform behaviour’ for all interviews by relying upon a “conversational mode”, the interview “will lead to a social relationship of sorts, with the quality of the relationship individualized to every participant”; and thirdly, the interviewer uses “open rather than closed-ended questions” to elicit in-depth answers. As Meyer (2008, p. 70) importantly points out, “within this framework research participants are seen as active meaning-makers rather than passive information providers, and interviews offer a unique opportunity to study these processes of meaning production directly”. The researcher used WhatsApp calls to 12 students to inquire about the impact of increasing class size on the quality of higher education. The WhatsApp calls allowed the researcher to collect data while adhering to the lockdown regulations that did not allow face-to-face meetings. The reason for opting to use a semi-structured interview guide was that the views and opinions of the respondents were obtained in a structured manner (Guerra-Santin and Tweed, 2015). In addition, the COVID-19 pandemic and the regulations on lockdown made it impossible to collect data physically as there should be the maintenance of social distancing.

The qualitative researcher begins data collection with a general topic and notions of what will be relevant to the topic (Creswell, 2018). The methods are the means to answering the research question and not a logical transformation of the latter (Mason, 2002). The choice of data collection methods in this study rested not only on the research question, but also on the actual research situation, such as the COVID-19 pandemic, and what would work most effectively in that situation to provide the required data (Farooq & De Villiers, *Telephonic Qualitative Research Interviews*, when to consider them and how to do them, 2017).

3.6 Data analysis

As with all data, analysis and interpretation are required, this is to understand the collected data (Guerra-Santin & Tweed, 2015). Analysis began at the preliminary research stage, where

certain themes emerged from the review of the literature. At this point, the researcher began to make notes on what was relevant to the topic and developed tentative ideas about the links between the concept of large class size and other factors that could influence the quality of learning. The intention of data analysis goes beyond describing the findings, it also includes meaningful and correct interpretation (Noble & Smith, 2015). At the data collection stage, the researcher wrote memos not only to capture analytical thinking but also to facilitate such thinking and stimulate analytical insights (Braun & Clarke, 2018). Interview transcriptions were organized into manageable categories and on several themes, which were aligned with the research questions. They were examined using thematic analysis as suggested by Krippenorf (2004), and Braun and Clarke (2006).

Data was analysed using thematic analysis, using a six-phase method as explained by Braun and Clarke (2018) to, “provide a rich and detailed, yet complex, account of data” (p.78) is considered ideal for this study. The initial stage of data analysis involves the researcher’s perusal of the transcripts generated (Connelly & Peltzer, 2016). However, Ulin et al. (2005) argue that in qualitative research, analysis is not a specific event but rather an ongoing process that informally unfolds before the formal stage of data analysis. Except for the first interview, before the commencement of each interview, the preceding recorded interview was transcribed to highlight areas that could be improved. This approach is supported by Lindelöf (1995) who posits that transcription should be conducted immediately after the interview to help shape the next discussion since it could highlight issues that require being followed up, dropped, or introduced. The researcher aimed to use Lindelöf’s (1995) suggestion to generate rich data. Overall, Lindelöf’s (1995) suggestion is believed to help to enrich the quality of the data collected.

Powell and Renner (2003) argue that a good and accurate analysis depends on understanding the data. A thorough reading of transcripts results in the researcher becoming ‘immersed’ in the data which should increase familiarity with the depth and breadth of the data sets (Blair, 2015). Immersing oneself in the data is described by Fourie (2007), as ‘deep-drilling,’ a phrase that emphasises the importance of gaining a deep understanding of the underlying issues in the study. In the second phase, interesting features of the data were systematically coded, and relevant data were to be coalesced into each code. Having transcribed 12 recorded telephonic interviews, the researcher began by examining the quality of the collected data. While some of the collected data was not relevant to the research objectives, most data turned out to be useful

in the end. At this stage, the researcher was required to read and re-read texts and to listen to the recorded interviews repeatedly to ensure accuracy. The researcher went through the data and wrote the impressions that could be relevant to the study objectives.

The researcher having been now familiar with the data, revisited the objectives and research questions to determine if the collected data would answer the research questions. Then the researcher began to focus the analysis on each research question, this required that data be organized by a question and looking across the responses from participants to identify consistencies and differences. The data from each question was then gathered. The approach was also used on topics and concepts. After familiarisation with the data, the researcher began to examine relationships between topics, concepts, and the research questions.

Thirdly, codes were collated into tentative themes. Coding the data entails identifying themes and patterns, this involves ideas, concepts, behaviours, and terminology that were used and organising them into coherent categories that summarise and bring meaning to the text (Braun & Clarke, 2018). The process began with a list of themes or categories in advance as identified in the review of the literature. Identifying these categories beforehand provided direction for what to look for in the data. Themes were identified before categorising the data began and data was searched for a text that matched these themes. Having a pre-set category and then going through the data provided the researcher with emergent categories that were not pre-set before categorization. These categories emerged because of working with the data. The researcher started with pre-set categories and added others as they emerged.

As Braun and Clarke (2006) note, qualitative data analysis has iterative aspects, and it is important to note that the list of preliminary categories was altered as the researcher began to work with the data. This required some adjustment in the definition of the preliminary categories to accommodate data that could not be fitted in the pre-labelled themes. The main categories were also broken down into subcategories. The data was then reorganized into smaller, more defined categories to allow greater discrimination and differentiation. As data was organized into categories, themes began to emerge within and between the categories. Examining the relative importance of each theme and weighing even subtle variations was a crucial part of the analysis. The researcher was interested in the summarization of themes as well as capturing the differences and similarities between participants' responses within a particular theme. This was done by assembling the data pertaining to the theme and then

searching for the key issues being expressed in each category, similarities and differences in the way interviewees responded to questions and even the subtle variations in these responses. The themes and connections were used to interpret and synthesize the data. The researcher started the process by developing a list of key findings that were discovered as a result of categorising and sorting the data. This was done while taking into consideration the major lessons learned, and new lessons learned.

At this point, all data associated with each theme is organized accordingly. Consequently, codes would then form either main themes or sub-themes, some could even be cast off. Importantly, candidate themes were combined, refined, separated, or even discarded. The fourth phase is that of reviewing the themes, substantiating if they agreed with coded extracts thereby creating a thematic map of the analysis (Braun & Clarke, 2013). At stage four, there are two levels of theme reviewing and refinement and these are: reading each collated extract within individual themes and reading through the whole data set (Babbie & Mouton, 2011). This is followed by defining and naming the themes and finally relating the analysis to both the research and literature (Bless, Higson-Smith, & Sithole, 2013).

3.7 Trustworthiness

The trustworthiness of this qualitative research study was ensured by following the principles listed below (Lincoln and Guba, 1985). In assessing trustworthiness, the researchers must strive to convince themselves and others that their study findings are meaningful (Babbie & Mouton, 2011). The various strategies used to enhance trustworthiness in the current study are described below.

Credibility

The researcher kept the research supervisor informed at each stage of the process, providing the original tapes. The researcher will provide tapes and transcripts and analysis at each interview batch.

Transferability

The researcher has facilitated the readers to assess the transferability to their contexts (Brink, 2012). To establish transferability, sufficiently dense descriptions of the findings were provided such that the reader can assess the transferability of the study and applicability to

his/her context (Bless, Higson-Smith, & Sithole, 2013). Detailed descriptions of the setting and the methodology inclusive of the data analysis and time frames of data collection were provided (Brink, 2012; Scott, 2017).

Dependability

Dependability is when the findings in a study are consistent, reliable, and can be repeated (Holloway & Wheeler, 2010). After transcribing, the transcriptions were emailed to the participants for validation by the researcher this ensured their satisfaction thus confirming if it is a fair reflection. A detailed description of the data analysis through the steps of thematic analysis as described by Braun and Clarke (2006) is provided in the section titled data analysis.

Confirmability

Confirmability of data was ensured by keeping all data collected, confirming data collected with participants, analysing data, forming the findings, and developing the measures used for study review to verify the findings from the data gathered (Holloway & Wheeler, 2010).

3.8 Limitations of the study

The question of what problems may occur throughout the research project and how to deal with them is a matter of paramount significance (Scott, 2018). There were limitations encountered by the researcher in this study. Some of the target population was not willing or not available for participation. One of the challenges identified was the use of telephonic interviews, not being able to conduct them in person (face-to-face) and having to adhere to COVID-19 regulations. The lack of visual cues made it hard to establish and maintain rapport, some of the interviews took more than 50 minutes as a result. Unlike face-to-face interviews, telephonic interviews tend to limit the interviewer from offering friendship gestures such as offering a cup of tea (Farooq & De Villiers, 2017). Such acts are known to create and maintain a conducive environment for a free-flowing conversation (Holt, 2010). The consent forms were sent via emails to be signed and returned to the investigator, however, most of the requests were not responded to by the potential participants. Some of the participants were called several times and did attend the calls although they had confirmed their participation. Some of the participants complained about not having enough mobile data for the interviews, hence, the interviews could not be conducted over an extended time. Some of the potential participants

could not be reached owing to mobile network not being available. To address some of these limitations, more time was allocated to the data collection process.

3.9 Ethical considerations

Conflicts of interest and ethical dilemmas always arise throughout the research process (Doody & Noonan, 2013). The researcher was aware of the responsibility to be always respectful and sensitive of research participants, respect their constitutionally guaranteed human rights and fully endorse the ethical code of the University of KwaZulu-Natal. For the research project to be successful, permission to conduct the research was sought and granted by the University of KwaZulu-Natal through the Humanities and Social Science Research Committee with protocol number HSSREC/00002248/2020. The research project was conducted once the University of KwaZulu-Natal had approved the research topic. According to Babbie (2010), participation in any research project must be voluntary. The participants are quoted verbatim using pseudonyms to protect their identities. Therefore, research participants were assured of confidentiality and were also informed that they were free to withdraw their participation from the research whenever they felt like doing so.

Babbie and Mouton (2010, p. 34) further argue, “the principles of informed consent, voluntary participation, protection from harm and personal identities should guide the social research”. Therefore, because of the possibility that the research might raise psychological discomfort for participants, the researcher ensured that ethical concerns were given particular and special consideration. At the beginning of each research interview, research participants were asked to sign a consent form. The participants were also asked to grant permission for notes to be taken during the interview and it was ensured that no identifying particulars are recorded. The research participants were approached, and the purpose of the research project was clearly explained to them. The researcher shared the aims and purpose of the study, the type of interview, and other data collection procedures with the participants. The above-mentioned precautions were used to ensure confidentiality; transcriptions and notes were kept in a locked safe and no names were attached to the tapes, transcriptions, or notes.

The researcher made it clear to the research participants that participating in the research project did not mean that their circumstances were going to change. Having agreed to participate and the purpose of the study explained, the consent form was read to each participant, who then

verbally gave their consent to be interviewed. Each participant was then sent a form through email and asked to sign to acknowledge giving consent. The researcher was very sensitive to the participant's emotions when probing questions that could psychologically harm the participants. The researcher conducted interviews pertaining to the research project once the University of KwaZulu-Natal approved the proposal and after permission to conduct interviews was officially authorized by the University of KwaZulu-Natal Ethics Committee.

3.10 Summary

The focus of this qualitative study is to explore students' perceptions of large classes concerning their learning. The study was conducted at the University of KwaZulu-Natal in South Africa. Data was generated through telephonic interviews; this was done to adhere to COVID-19 lockdown regulations in South Africa which encourage social distancing, hence discouraging face-to-face interviews. The chapter detailed the methodology used in this study. It described the study area and the target population. It also discussed how the interpretivist paradigm was chosen and employed in this study. The chapter further justified the use of the qualitative approach in the research. The researcher described the sampling method and why the principle of saturation was used. The chapter discussed how data were collected and analysed. It also described how validity was ensured. Lastly, the chapter discussed ethics as observed in this study.

Chapter 4

Results

4.1 Introduction

This chapter presents the findings gathered from the interviews. The presentation of the data is divided according to themes that emerged from the data and presented in line with the three research questions. The researcher employed in-depth interviews to collect data through recorded WhatsApp calls with the 12 participants. The participants are quoted verbatim using pseudonyms to protect their identities. The objective of this qualitative study was to investigate the perceptions of students on the impact of large class sizes on the quality of learning. Over the progression of these interviews, students were invited to give their understanding of the large class size, class size effects on academic performance, understanding of the subject material, the challenges of large class size, and their coping strategies. They were also asked how their interactions with other students and lecturers in the class were affected by the size of their class.

4.2 Study sample characteristics

The participants are predominantly second-language speakers of English, they were allowed to speak any official South African language of their choice during the interviews. On the few occasions that participants infused other languages rather than English, the non-English parts of the interviews were translated into English. Table 4.1 shows a summary of the characteristics of the participants. The sample included seven females and five males, their ages ranged from 24 and 39 years. Although the invitation to participate was advertised and sent to those who showed interest, respondents in this study were all Black (African). This included two nationals from other African countries. Most participants attended public schools and experienced overcrowded classes early in their education, whereas three participants had attended private schools which were less affected by large classes. Each of the 12 participants selected in this study was enrolled in the Master of Population Studies programme and had attended classes in a higher education institution for at least 5 years.

Table 4.1: Sample characteristics

Participant pseudo name	Sex	Age	Years of higher education	Private or public schooling
Andile	Male	32	8	Private
Buhle	Female	26	6	Public
Bulelwa	Female	25	5	Public
Dintle	Female	29	7	Public
Kutloano	Male	35	11	Public
Molotsi	Female	25	6	Public
Njabulo	Male	39	7	Public
Reatile	Female	27	6	Public
Smangele	Female	25	7	Public
Sinazo	Female	24	5	Private
Thabang	Male	30	8	Public
Thabiso	Male	26	8	Private

4.3. Students' perceptions of class size

All participants stated that they favoured smaller classes, they were strongly of the opinion that large classes had adverse effects on their learning, while smaller classes offered a conducive environment for both student engagement and achievement. Students' perceptions of the impact of class size on student learning were assessed using their responses, the following sub-themes were identified as conditions that students believed affected their learning in both large classes and small classes: large classes are prejudicial to learning, and small class size aids high-quality learning.

4.3.1. Large classes are prejudicial to learning

Participants were asked to give their understanding of large class sizes, they did not give a specific number for the ideal class size, their narratives included the availability of resources and the lecturer's capacity to manage the class. According to the participants, a large class is where the available resources failed to accommodate all students in that classroom, the

resources include desks and chairs. Participants stated that sometimes the number of students was too large for a single lecturer to manage. All participants agreed that whether the class was large or small depended on conditions such as the subject that was being taught, the teaching style of the lecturer, and the lecturer's ability to manage the class, for example, being able to deal with disruptive behaviour inside the classroom. This was explained by one of the participants who stated that an overcrowded class was that where the venue could not accommodate the number of students due to a limited number of available seats. This is shown in the quotation below.

"I think it depends on the venue size, but I will say it is any class size where the student population exceeds the number of seats in that venue" (Andile, Male).

This was supported by another participant who also highlighted the importance of the role of the lecturers and their classroom management styles in students' learning. According to this participant, the lecturer's classroom management skills and teaching style can determine whether a class can be categorized as large or overcrowded. The participant implies that large classes are predominant in first-year courses, and the effects of large classes can be mitigated by the selection of appropriate classroom management styles of the lecturers.

"I was in a large class in first year, so my understanding is a large class size is when a ratio of students to the teacher is too big. For example, we had more than 50 students to one lecturer, sometimes the lecturers failed to control the students who were unruly, and it led to undue disruptions" (Sinazo, Female).

These definitions are like the one given by the National Centre for Education Statistics (NCES) (2000), which states that a large class or overcrowded class is one where the number of students is larger than the number that the venue is supposed to accommodate. Based on these explanations it can be deduced that what constitutes a large class environment largely depends on a combination of elements, such as the available resources and the number of students in the class, classroom management style, and teaching style of the lecturer. From these narratives, a class is labelled large or overcrowded depending on whether the venue has enough space and adequate furniture to accommodate the students and other variety of factors such lecturer's ability to manage the class and the choice of teaching methods.

One of the main points to come from the interviews concerned difficulties that large classes placed on students in terms of the teaching and learning process. The main difficulty faced by students was the amount and quality of lecturer input on the teaching and learning process, there were many comments on the way that large classes adversely affected the nature of lecturer inputs, and participants felt that it was nearly impossible for the lecturer to attend to all student's needs in a diverse large group from different backgrounds. Those students who were lagging behind could not be helped by lecturers of large classes. One participant explained that students do not receive necessary individual attention which is necessary because students may not grasp the course content at the same time. This is clear in the quote below.

"I am unable to engage at all when there are many students, there are always disruptions. One does not get any kind of individual attention and we have to bear in mind that students are different and grasp at different times. Some do not read for the class and the [class] moves at a slow pace because of them" (Thabiso, Male).

"I feel that the quality of teaching and learning in our undergraduate classes was low due to having a large class of more than 60 students. In group work, one would be in large groups, which meant less individual attention. When you don't understand what is being taught it is your own problem, the lecture moves on" (Andile, Male).

It is evident from the above quotation that large classes bring about the difficulties faced by students, and that the participant feels that smaller classes would be more beneficial for their learning. There was a clear indication that participants associated large classes with low quality of teaching and learning.

4.3.2 Small class size aids learning

When the participants were asked to talk about the effect of the class size on their learning, everyone agreed that a smaller class size environment offers a conducive environment for learning. In the below excerpts participants state that smaller classes afford them more learning time. With smaller classes, it is easy to cover more course content during the lecture because of fewer disruptions. For example, in the below excerpts, the participants indicate that being in a class with fewer students has a positive effect on both the time spent on actual learning and the delivery of the lecture.

“I would have had more time to learn in a smaller class. And in bigger classes, you are forced to go read the textbook because you came out of class without absorbing anything from the lecturer. And you cannot even focus or take notes because of disruptions” (Sinazo, Female).

“Personally, I like smaller classes because you get to learn more inside the classroom, and we get to cover more ground” (Dintle, Female).

In the interview, it is clear that smaller classes have a positive effect on the amount of learning taking place during the lecture. The participants felt they easily covered more ground in small classes than in larger classes in terms of course content, they felt that they had more time to concentrate on learning. Unlike in larger classes, there were fewer disruptions in small classes.

The narratives also included observations about the students’ familiarisation and being able to help each other. The participants felt that students in smaller classes easily get to know each other, which makes collaboration easier. One participant explained that getting to know each other is much easier in smaller classes and it fosters some sense of belonging.

“I think getting to know each other is much easier in small classes and it fosters a sense of community. It becomes helpful when you do not understand the lecturer as classmates can always assist you” (Buhle, Female).

Unlike in larger classes where students are not often familiar with each other, students in smaller classes can easily assist each. As a result of constructive familiarities, students reiterated that they were more satisfied in smaller classes and that their work was of high standards. One participant commented that it was more common for students to know each other and help one another in smaller classes as compared to larger classes.

“We have gotten to know each other much better than we did when we first met. And it makes helping one another easier. However, such interactions are rare in large classes especially in first-year classes and one is never bold enough even to raise a hand” (Simangele, Female).

“In a small class, one of the best things for me would be the way we get to know one another and share more knowledge” (Thabiso, Male).

Students are made to work collaboratively, which is not easy in a larger class. One participant elaborated on the part played by friendships in promoting group relations and therefore learning outcomes in smaller classes.

“When we know and like each other, we benefit more from working together. We tend to accept more responsibility for our learning and are more motivated to achieve our goals than those who are not friends” (Njabulo, Male).

According to Saprudin et al (2019), if a smaller class is structured optimally with the aim that the learners understand the mechanisms of collaborative learning and realise their group's purpose, learners benefit socially as well as academically due to this small group familiarity. Relationships fostered in classrooms can help students to develop their skills and student-lecturer interactions can assist students to develop into subject specialists (Machika, Troskie-de Bruin & Albertyn, 2014).

The participants said that they were willing to learn new concepts and participate in new activities, as they were not afraid of being judged by large groups for making errors. They learn from each other in addition to being responsive to their tasks. Furthermore, participants said they benefitted from smaller classes in terms of structure and classroom management by lecturers and lecturers made lessons more stimulating in smaller classes. The excerpt below reflects the explanations from one of the participants who commented on how students were not worried about being ridiculed for making mistakes when the class had fewer students and how students were happy to learn new concepts in smaller classes.

“I feel that I can take risks and not worry about making mistakes when there are fewer students in the class. We learn from each other, and we are happy to learn new content” (Thabiso, Male).

“In a smaller class, I find that even the lecturer is excited about the course content and is [more] prominent in class. The classroom tends to be a happy place and enjoyable for the students to be in. Group work is more enjoyable. When the lecturer

structures it very well, I feel that we as students get a much better idea of how to get a grip on concepts. And we get our learning skills up to [take on] more challenging learning ideas in a group. That has been successful” (Andile, Male).

It is evident from the above quote that the participant feels that lecturers tend to be more enthusiastic when there are fewer students in the class. The participant feels that smaller classes create a conducive environment for learning as students often grasp concepts much quicker.

Nevertheless, whilst most of the participants’ comments concerning smaller classes recorded were optimistic, the interviews revealed that it important to look at the challenges they had faced in much smaller classes as their views may show why students prefer smaller classes. When questioned particularly about the challenges, the participants’ comments reported points, for example, socialising. For example, one participant explained that more time was spent on non-educational activities such as having conversations that were not related to learning in smaller than

“In a smaller class, there is usually more socializing than working towards achievement. More time is spent on activities that are not related to learning” (Kutloano, Male).

Attending a small class, students require a different set of attitudes than they did in large classes, and some students find it difficult to adjust to different teaching strategies used in small class sizes. One participant remarked on the challenges students have in acclimatising to a group effort in a small group after having been in a large group, having to adapt to different teaching strategies was not easy.

“In most group tasks the difficulty is listening to the lecturer and being able to interact with group members. There are a few difficulties in the beginning because we have to change the whole way of thinking especially when we have done things in larger groups, it is a whole new mindset for most of us” (Thabang, Male).

From these excerpts, it can be deduced that students preferred smaller classes to large classes for a variety of reasons. Contrary to large classes where there was a shortage of chairs and

desks, respondents believe they were less affected by resource shortages and disruptions in smaller classes. They were not afraid of being ridiculed for making errors in smaller classes, they stated they were able to participate and ask for further explanations if they did not understand.

4.4 Limited classroom interactions

In the interviews, all participants reported there were fewer interactions between the students and instructors, and there were also limited interactions between classmates in large classes. They were asked to talk about what they think, and feel were the contributing factors to limited interactions in large classes. The following sub-themes were identified as factors that lead to participants having the perceptions that they do: Disruptions, incivility and anonymity, and classroom management issues.

4.4.1 Disruptions, incivility, and anonymity

When students were asked how class size affected their interactions with classmates and lecturers, most talked about how large classes were not an ideal environment for dialogue, they indicated that classroom incivility was common in large classes. Classroom incivility reported by the participants included fellow students disrupting the class by having private conversations, arriving several minutes late, leaving during the lecture, talking when it was not their turn to speak, and displaying a lack of interest. One participant highlights that it is common in large classes for students to display a lack of interest in classroom activities such as discussions, students attend to their gadgets during class, with some having their laptops and phones open during the lecture.

“Many students attend class just to fulfil the obligatory ritual, and just to sign the register. It is easy for them to disrupt the class. A lecturer may begin the class on time but students will stagger into the class several minutes late and some leave in the middle of the lecture. Others will be having private chats and making noise despite attempts from lecturers to reprimand them and a lecture will pause for several minutes. Sometimes students display a general lack of interest. Some are on their phones during class, texting, or on the internet, some have their laptops open and are on social media. Minutes before the end of the lecture, students pack their bags so they can leave early”
(Thabang, Male).

Participants indicated that classroom discussions provided them with opportunities to learn from both their lecturers and peers. However, discussions in large classes easily turned into chaotic scenes as students tend to speak out of turn and continued talking even when they were instructed to do so. Similar evidence was found in the classroom incivility literature, in one of the earliest studies on student uncivil behaviour Boice (1996) indicated observing classroom incivility across more than 75 per cent of the large lecture classes that were being studied.

According to the participants, students of large classes get fewer opportunities to speak, and they get less individual attention. Participants also mentioned instances when they were unable to get involved during the teaching and learning process when lecturers only pointed to those students they were familiar with during class discussions. The responses from the interviews suggest that it is common for students in large classes to have feelings of anonymity and be passive. Ultimately, such feelings of anonymity and passiveness tend to deprive students of learning opportunities. One participant indicated that there were instances when they were not able to participate, get involved, interact with the lecturer and not get individual attention. Furthermore, the participant mentions being lost in the crowd, suggesting a lack of clarity about course concepts or topics

“I get lost in the crowd and never get to participate. Some lecturers and students are familiar with each other from previous semesters or years (undergrad). Lecturers know students by name and they seem to be their favourites. Such students are given more time to contribute, and they get more attention from that lecturer” (Njabulo, Male).

The above excerpt suggests that students face the problem of anonymity in large classes. According to Dean and Wright (2017), minimal classroom interactions in large classes tend to reinforce students’ feelings of anonymity which results in students disengaging from resources such as lecturers and their peers. This, in turn, contributes to students’ lack of clarity about course concepts.

When PowerPoint presentations are utilized during the lecture, poor visibility of the presentation and not being able to see the lecturer worsen the learning experience for those who could not find seats in the front. Among the challenges listed by the participants are the inability

to see and hear the lecturer for those at the back of the classroom. One participant explained that there were instances where students could not participate in class as a result of being unable to see what was being presented or hear the lecturer. This is shown in the quotation below.

“For you to interact with the lecturer and ask questions you have to know what is it that you did not understand. In a large class full of students, it is easy to miss out on what is being said and sometimes you are too far to even see the slides being presented” (Thabang, Male).

Participants were of a strong view that student-lecturer interaction is vital for their learning. However, they felt that eliciting student involvement in large class lectures was particularly challenging for lecturers. As a result, lecturers tend to use teaching methods that require less participation from students. According to the participants, large classes often rely more on lecture methods and less on classroom discussions. Lecture methods are fast-paced and leave less room for interactions. One participant in this study indicated that in large classes it is difficult to interact with lecturers and it is hard to get clarity on concepts from the lecturers.

“Too large classes make it difficult to interact with the lecturer. Even having the slides available on Moodle (a computer system for creating and sharing educational materials online) does not help much. Lecturers are not very open to helping us through understanding difficult content, especially in a large class” (Reatile, Male).

In the interviews participants stated that introductory university classes are often overcrowded, as a result, such classes are impersonal, and they experienced anonymity. When there is a large number of students in the class, the lecturer is less likely to know each student by name. They also expressed that when the lecturer called students by their names, it signalled respect to them, and they felt recognized. According to the participants, lecturers only know a select few in large classes and the majority of the students are excluded from participation. For example, one of the participants stated that lecturers tend to point at their known favourites and the rest are subjected to a lecture teaching method.

“I am unable to grasp the concepts in large classes. Lecturers teach as if they are preaching and are always pointing at their known favourites” (Smangele, Female).

“The notable difference between large and small classes is that there is little or no personal connection between students and lecturers in large classes. Contrary to large classes, lecturers know my name in smaller classes, and I do not feel like I am just a part of the furniture (insignificant)” (Kutloano, Male).

It is evident from the interviews that students attending large classes experience high levels of incivility and anonymity, and there is less sense of being a part of the classroom community. Lecturers of extremely large classes are less likely to know every student in that particular class, this results in students becoming anonymous. According to Elder, Seaton and Swenney (2010), student anonymity is positively related to classroom incivility. When students are anonymous in class, there is little or no chance of negative repercussions and students are less likely to account for their uncivil behaviour (Elder, Seaton & Swenney, 2010).

4.4.2 Classroom management and teaching styles

Participants revealed that classroom management is important for ensuring that students achieve the desired learning outcomes. Participants also stated that class size impacts the organization and presentation of lessons. There was a consensus among the participants that noise and disruptive behaviour are closely related to how the lecturer presents the lesson and manages the classroom. The participants were broadly dissatisfied with their lecturers’ efforts in dealing with classroom management in large classes. For example, one participant noted that it is common for lecturers of large classes to fail to manage and control students’ behaviour when there are many students in the classroom. One participant argued that because of large class sizes, the lecturers are often unable to exercise control over the class and efficiently deal with issues of discipline.

“Even when the lecture hall is big enough to accommodate many students, sometimes lecturers fail to manage the class. Some students will be eating and having a private conversation during class while the lecturer is teaching. It is usually certain groups [of students]” (Sinazo, Female).

In the interviews, participants indicated that their unpleasant experiences in large classes were directly related to the lecturer’s role, teaching style, and the lecturer’s ability to facilitate learning. Students view lecturers as a source of information, however, they expressed

dissatisfaction with some lecturers' inability to tailor their teaching methods according to the size of the class. One participant explained that lecturers tend to choose teaching methods that did not promote students' participation and engagement, and they did not tailor their teaching styles for a diverse group of students with different aptitudes. This is shown in the quotation below.

“In all phases of my schooling, including varsity, when there are so many of you in the class, some teachers will present what they prepared without caring if everyone understands. And they do not involve students in the teaching and learning process. Sometimes, as much as you are seated in front and you can hear the lecturer, you never get to concentrate because of noise. Even the lecturer would only focus on the groups that seem interested and leave out the noisy sections” (Molotsi, Male).

“I am unable to grasp the concepts in large classes. Lecturers teach as if they are preaching and are always pointing at their favourites” (Smangele, Female).

Participants see the lecturer's role in the classroom as that of a “motivating student-centred learning facilitator”, they believe that the lecturer should at least establish a classroom environment that is appealing to the students, for example, by infusing a little bit of comedy to compliment the mood. Participants also explained that lecturers calling students by their names indicated respect and made the students feel recognized as individuals in a large class. Managing classroom communication was also the strategy used by the lecturers in managing large classes. In a large classroom, caring leadership is a proven way to enhance the student experience. Caring instructors are respectful of others and have a work ethic that demonstrates a passion for students. Two participants remarked that differences in lecturers' teaching styles and their communication were the key differences between large and smaller classes.

“There is a difference in lecturers' teaching styles. Some cannot facilitate lectures with excitement and students tend to have no high regard for such lecturers. While other lecturers can break the ice and have the ability to communicate complex subjects effectively. These differences in lecturers' teaching styles tend to be more dominant in large classes” (Dintle, Female).

“Sometimes it is difficult to determine what the lecturer required or wanted in the assessments. When the content is difficult to understand, I find it difficult to ask questions in class and sometimes the lecturer is not approachable” (Kutloano, Male).

The importance of the role played by classroom management in ensuring the students achieve the desired learning goal, regardless of the class size can never be overemphasized. Participants expressed the view that whether there are tens or hundreds of students, it boils down to the fundamental issue of how the lecturers controlled the situation that they were confronted with in terms of behaviour in large classes. It has been long argued that effective classroom management is crucial for the quality of learning (Evans, 2013). Eckel and King (2004) stressing the importance of self-determination in the learning process, argue that effective classroom management can stimulate students and influence their interests.

While participants commented on the importance of classroom management and the lecturer’s role in the class, they also felt that some lecturers did not manage the class effectively, they failed to control students. When asked about lecturers’ ability to deal with disciplinary issues in the context of large classes. Most participants expressed that when lecturers did not adequately attend to discipline problems it had an impeded effect on their learning. One of the participants explained that lecturers often failed to discipline students in large classes. This is reflected in the below quote.

“One way of seeing (identifying) an overcrowded class is when there are recurring disciplinary issues. Students become too noisy, especially during classroom discussions, and students become rowdy. I suppose it is difficult for lecturers to discipline students when the number of students is too high” (Buhle, Female).

The use of teaching methods that do not promote student participation is common in large classes. All participants indicated that there was limited student engagement in larger classes which was a result of a failure on the lecturers’ part to use teaching methods that enhanced student engagement. One participant explained that some lecturers tend to just present the information without involving students and they did not attend to students’ learning needs, which in turn resulted in students not participating.

“Most of the time lecturers use PowerPoint, in which they do not engage students and there is very limited participation required from students. Students miss lectures regularly, and it is not uncommon for them to arrive late for the lecture. Evidently, lecturers become overwhelmed and do not attend to students’ needs, at least not to all the students. This often leads to low (poor) interaction with students and students get less individual attention” (Sinazo, Female).

Finally, the participants reflected on the importance of classroom management and the need for lecturers to use appropriate teaching styles in large classes. They also commented that discipline problems were a challenge that required commitment on the part of the lecturers and the students equally. Stressing the importance of classroom management and the choice of teaching techniques in large classes, Shalem and Slonimsky (2010) argue that the lecturer’s ability to manage the classroom can help maximize learning opportunities.

4.5 Student experiences in large classes

Participants were asked to elaborate on their experiences in large classes and talk about the challenges they faced in overcrowded classes. The following sub-themes were identified from the interviews: inadequate resources and space, task management and group work, and students adapting to large classes.

4.5.1 Inadequate space

The participants reported having been in an overcrowded classroom where there was not enough space. One participant mentioned that one indication that a class is large or overcrowded is inadequate classroom space where students and lecturers’ movement was restricted as they could not move or walk freely in the lecture hall.

“There are too many students in first-year modules. Some sit on the floor and the space is not sufficient for the number of students in the lecture hall. Movement is restricted, especially for the formation of discussion groups” (Thabang, Male).

The overcrowded class led to many students being cramped in small spaces and at times there is not adequate ventilation, leading to high room temperatures and unpleasant smells. According to one of the participants, a large group of students in one setting leads to students

being cramped into small spaces and closely spaced desks in classrooms with inadequate ventilation which can cause health hazards. Participants stated that unpleasant smells and high room temperatures make it hard to concentrate during the teaching and learning process.

“The classroom is too overcrowded and there are just too many of us. The space and air are just not enough, classrooms get stuffy and during hot days it gets worse. Students take their own sweet time when coming into the lecture. There are also rowdy and making a lot of noise. Sometimes the seats are not enough, chairs and desks must be moved from neighbouring lecture halls resulting in students taking too long to settle down and the start of the lecture being delayed” (Thabang, Male).

“Being in a large class in summer is a nightmare. There is not enough space and ventilation, causing unbearable heat and unpleasant smells at times. Due to lack of space in some classrooms, temperatures can get too high and becomes hard to breathe” (Reatile, Female).

One participant explained that after lunchtime some students bring food into the classroom that causes a smell that is unpleasant to others, making it hard to concentrate. It is difficult to control for differences in large class sizes and some students may struggle to concentrate which ultimately affects their performance.

“Students can be so inconsiderate, I am often thrown off by the smell of garlic and eggs. Attending classes around lunchtime is the worst experience. Students open their lunch boxes inside the class. Imagine the unbearable smell of cooked eggs” (Andile, Male).

The above quotations indicate the challenge of lack of space and inadequate spaces in large classes that leads to discomfort for the students. The majority of the responses indicate that students of large classes are affected by challenges of poor ventilation and hot temperatures, and peers who exude unpleasant odours. The responses also show that students’ concentration in the classroom is also adversely affected by the lack of space and inadequate ventilation.

4.5.2 Group work and task management

The participants in this study stated that not all the available lecture time is spent on learning in large classes. Some of the time is spent dealing with disciplinary problems and disruptions. However, participants argued that what is more important is not the class size but task management by both the lecturers and the students. The participants raised issues about the assignments they undertook and commented on the importance of having tasks that were motivating and enquiry based. In the below quotations, participants stated that they felt motivated to complete tasks and classroom activities when they liked the subject. They felt that tasks and activities that were enquiry-based stimulated them more rather than lectures that were taught as if they were preaching.

“If I like the subject we are doing, I do not have a problem. Everybody gets enthused”
(Andile, Male).

“We, as students, prefer group tasks as they allow us to interact with each other and share information. Such groups work well when the task is enquiry-based, rather than having to absorb the information provided by the lecturer. Lecturers teach as if they are preaching and always pointing at their favourites” (Sinazo, Female).

“Basically, this sort of enquiry-based tasks work well in group work. And then in the groups we have to put forward our solutions and then we do a group presentation and so on. We also get to choose what the preferred project is” (Thabang, Male).

Participants mentioned group work as one of the strategies often used by lecturers to facilitate teaching and learning in large classes. This entails encouraging students to work in small groups and share tasks. Small groups are formed within a large class to deal with the effects of large class sizes, however, participants in this study indicated that such are often dysfunctional and time-consuming. The narratives included the difficulty in group task execution, insufficient time for task completion, and lecturers not being able to monitor students' work. Students were required to split the tasks, accept diverse duties and participate equally in decision-making in the group. One participant explained that due to diverse and often opposing views, there was not enough time to cover group tasks intensely.

“A lot of time is spent on debating, there are just too many different characters and attitudes. You have got to have your own leader, some just assume the leadership role without being chosen and without the necessary skill set. I prefer being led by the lecturer” (Buhle, Female).

Learning through group work is known to provide a small class size feel, a small group within a large class is known to resemble a small class in terms of classroom interaction patterns. During group work, where students are required to form small teams, a lot of movement is required. Students have to arrange themselves so that team members can maintain eye contact and have access to each other's work, and keep space for their movements and the lecturer's movement. However, most classrooms have non-movable chairs and not enough space for free movement. One participant explained that the seating arrangements in large classes are a problem during group work as the space is not adequate for the movement and involvement of all group members.

“The seating arrangement is important. Students in a group need space that separates them from other groups and this helps to stop other groups from poaching (stealing) stronger members, and members mixing with other groups and turning the whole activity into a chaotic scene. In small classrooms or lecture halls, such space is either not available or there is no free movement for lecturers and students. At times such seating configuration makes it hard to see the board or overhead projector and the lecturer is not audible” (Smangele, Female).

Without the lecturer's supervision, it is easy for individual students to experience anonymity during group work. For example, if other team members do not notice their group member seating outside the designated group space, it could imply that the input from that particular team member is not important and create resentment from the ignored member. One participant indicated that one of the problems during group work is that students tend to unintentionally exclude other members from group activities.

“There are potential problems during group work, those who are outgoing tend to take control of the group and easily shut out the quiet ones and their input is ignored. Someone in the group turns his back or her back on you, you automatically get shut out of the group discussion and your input is not heard” (Andile, Male).

Participants stated that the variations in students' levels of preparation and abilities, generally make it hard for group members to work at the same pace. Students do not equally benefit from group work, the less-prepared students tend to benefit from the better-prepared classmates, however, those of high ability and who prepare for the class, tend to lose their learning time while tutoring those less-prepared classmates.

“The unfairness of any teamwork is that some students come to classes without going through their readings. We have to allow them time to keep up with the rest of the group for them to make any meaningful contribution to the group, and a lot of time is wasted. Some are generally slow. In take-home assignments, we struggle to meet deadlines because of this” (Thabang, Male).

Participants stated that there were still limited interactions between students and lecturers as a large class meant either many small groups or larger groups both of which led to lecturers dealing with large numbers of students. This resulted in lecturers not observing all students' written tasks, which led to fewer opportunities for corrections on tasks. One participant indicated that there were fewer preparation exercises before assessments as a result, there was not enough time to get the required guidance from the facilitators.

“The lecturer cannot check all students' work. Students do not get enough feedback on exercise tasks to prepare for tests or assignments. Classes are short, there is simply no time to tackle issues even after being divided into groups” (Andile, Male).

Interestingly, some participants indicated they enjoyed group work and felt that it promoted classroom interactions. One participant explained how group tasks improved the interactions between students. This is shown in the quotation below.

“I think once we are together in that group, we decide who gets to speak and when, and how to respond to another student's comment without being offensive, and accepting positive criticism and constructive feedback. And then we democratically choose what is going to be the preferred project and then the large task is looked at and broken into sub-tasks, thus giving each other different roles in the groups”. (Andile, Male).

Participants agreed that group tasks have the potential to affect the way group members interact with each other. Participants indicated that gender imbalances during group work affected how they interacted with each other. One participant mentioned the difficulty that female students faced when in a group with their male counterparts who tend to be passive when they were outnumbered by their female counterparts. In this way, the larger class may impact negatively on class interaction.

“Sometimes when male students outnumber the females, they only interact with each other more and ignore the females. On the other hand, in groups where there were more female students than males, the females spent more time trying to involve the males in the discussions to the detriment of their own interactions. In both these groups the male students do, most of the time, outperform the female students. However, when groups are gender-balanced, male students and female students were equally interactive and there were no differences in achievement outcomes” (Reatile, Female).

According to Enright and Refinetti (2017), learners operating in same-gender pairs on an imaginative writing task convey a greater appreciation of association, inspiration, and satisfaction than learners in the mixed-gender groups.

All the participants concurred that learners need to be prepared or taught to work cooperatively. For some participants, this involved explicitly having the skills that facilitate cooperation. These included skills such as identifying the characteristics of successful groups. One participant indicated that working in groups helped students improve their interpersonal skills and conflict resolution skills

“Our lecturers always talk about what successful groups constitute, and what ingredients give us a sense of viability and how to encourage others to participate and have a voice. And being taught specific interpersonal skills and dealing with conflict” (Buhle, Female)

Teaching learners the interpersonal and small-group skills that facilitate cooperation in groups is critical to the success of these groups (Alber, 2014). Boboy (2017) found that when students worked in groups where they were trained to cooperate, they demonstrate more on-task

behaviour, give more detailed explanations and assistance to each other, and obtain higher learning outcomes than their untrained peers.

Participants expressed dissatisfaction with assessment feedback, the issues revolved around the technicalities of feedback, the timing of feedback, and the lack of clarity in the feedback. Students complained about delays in getting their scripts after tests and delays in obtaining feedback because of lecturers having to mark many scripts. All participants felt that there is a lack of adequate time dedicated to feedback for the assignments owing to a large number of students in a class. In the end, lecturers end up doing informal assessments where there is no way of requesting more explanations from the lecturer. The participants mention instances also where they did not receive any feedback.

“During group work, the lecturer looks at things like assessing how we are doing in the group. But that is not really formal assessment and there is no way of knowing if each person has done what was required. There is no feedback in all honesty” (Reatile, Female).

“The lecturers may get anecdotal evidence just by wandering around and seeing who is on task and who is progressing correctly. They are not reporting back to the class, and if what we have done is satisfactory” (Andile, Male).

“Lecturers seem to be struggling to mark tests and assignments. It takes longer to get feedback when the class is large and the feedback is not specific, it is usually just one generic line” (Thabang, Male)

The majority of the participants noted that group work in a large class has a disadvantage in terms of sharing the load. For example, participants noted there is difficulty in identifying each member's input during teamwork in large groups.

“It is always a problem because there is always someone who says they have done more work than the others” (Smangele, Female).

“The task of ascertaining exactly who contributed what can be quite daunting. As a result, some students get away with contributing very little yet capitalising on the strength of others” (Reatile, Female).

Every participant agreed that receiving feedback on their performance timeously is very critical for their learning. Furthermore, findings by Broadbent et al. (2019) revealed that feedback on what should be done may encourage learners to consider that they may advance if they are willing to exert themselves. Interestingly, the participants stated that when their lecturers repetitively used formative assessments, there was a strong indication of visible benefits in their achievement on assigned harmonised tests. Likewise, the results showed that the use of correct assessment methods helped learners to perform well in standardised examinations.

4.5.3 Students’ adaptations to large classes

Although most respondents felt that attending large classes posed many challenges and was stressful, they also confessed to having worked hard in their studies regardless of large class sizes. The participants were all masters students and thus have successfully obtained at least one degree. It is important to emphasize that students succeeded regardless of the challenges they encountered in large classes. In the excerpts below, students mention being self-reliant, having self-discipline, reading for the class, and having after-class interactions with the lecturers and tutors to have helped them in their studies.

“I ask questions in class. I prepare for class. I read for the class beforehand. I do what I am supposed to do. It is very important not to forget why you are here and you have got to voice out your problems. Lecturers are not fortune tellers, they cannot always see that you are having problems” (Andile, Male).

“It is up to us, lecturers already have obtained their degrees. Whether they teach well or not you will either pass or fail, there is no in-between. We have to take the initiative and be responsible for our studies. You approach your lecturer, your tutor, study with other students, and choose friends you can study with, join study groups” (Smangele, Female).

“Sometimes it is easier to get information from fellow students than from listening to the lecturers with their foreign accents, which made understanding information very difficult” (Molotsi, Female).

These responses suggest students can adapt and overcome challenges posed by large classes by seeking help when they are struggling, they can exercise self-discipline and prepare for the class. Interestingly, while participants have reported large classes to be detrimental to classroom interactions, they also mention instances where being around many students was helpful to them when they struggled and needed help in their studies.

4.6 Summary

This chapter focused on the key findings from the interviews that were conducted with students to learn more about class size. As outlined in the previous chapter, thematic analysis was used to analyse the data. To answer the three research questions, seven themes emerged, that related to how students perceived large classes: large classes are prejudicial to learning whereas small class size aids learning, and the effect of large class sizes on classroom interaction: disruptions, incivility, anonymity and bad choice of management and teaching styles result in limited classroom interactions in large classes. These include the importance lecturer’s ability to establish and maintain order in the classroom and the choice of teaching methods used in large class environments. Lastly, students’ experiences in large classes include a lack of space and difficulty in managing and participating in group tasks. However, through taking an initiative, students reported that they cope with the dynamics of large classes. These include forming study groups and consultations with lecturers and tutors. The participants reported that the invasion of personal space and feelings of being crowded led to an inability to focus during the teaching and learning process in large classes. The next chapter provides the conclusions and recommendations based on the core findings of this study.

Chapter 5

Conclusion

5.1 Introduction

This study explored the impact of increasing class size (large classes) on the quality of learning in higher education through the perceptions of students at the University of KwaZulu-Natal Howard College campus. This study draws on Martin Trow's triptych conceptualization of higher education development to understand the impact of large classes on the quality of learning. This chapter highlights the key findings from the interviews, the aim is to establish whether the investigation has provided answers to the research questions posed in this study. A summary of relevant findings of the research is discussed. The chapter also proposes recommendations on what needs to be done considering the findings. The conclusions and recommendations for enhancing academic achievement are discussed in detail in the following sections.

5.2 Discussion

In this study, it is clear that class size has the potential to determine the time used for learning as well as the teaching methods. To some extent, the statements from the respondents reaffirm the premise that large classes are prejudicial to learning. The main challenge presented by large classes is that they generally create a learning environment that heightens student passivity, anonymity, and classroom incivility, and impede learning. In smaller classes, by contrast, lecturers tend to know students by their names, and student-to-student and student-to-lecturer interactions are on regular basis. However, as the class size increases, only a small proportion of class members can be actively involved in classroom activities such as discussions in the classroom. Due to limited classroom interactions, most students' involvement in larger classes is restricted to their engagement with the material that is taught in that particular class. This implies that the quality of learning is affected by the number of students in the class. This further supports arguments in the literature and the structural-historical theory that highlight that the increase in class size consequently leads to a change in educational quality. This is in line with a study conducted by Muthusamy (2015), which identified inadequate space, minimal learner and teacher interactions, and disruptive behaviour as some of the conditions that hindered teaching and learning in large classes.

While most participants placed little emphasis on the direct effects of large classes on learning, having a large number of students in one seating could be a real cause of adverse effects on learning. For example, while 9 participants highlight classroom incivility in large classes, only three claim that large classes lead to less effective learning. It could be argued that any adverse effects of a large class size environment are not a direct result of size; rather they may be a ripple effect of other problems. For example, if classroom interactions between students and lecturers are an important factor in learning, then the difficulty in facilitating such interactions in large classes could be the real reason for the detrimental effects of large classes on student learning. Even if one places less emphasis on the direct effects of large classes on learning, the challenges stated by the respondents are daunting. It is therefore not surprising that large classes are a matter of concern in higher education. Hanushek & Woessmann (2017, p. 50) found that “class size, cannot influence academic achievement directly but must influence what teachers and students do in the classroom first before it possibly affects student learning”.

Like most class size research studies, this study reiterates that increasing student enrolments in higher education has resulted in large class sizes. It reveals that students view large classes as stressful and less productive in comparison to smaller classes which had a negative impact on the quality of their learning. These three reciprocal core findings in this study suggest that large classes do less to promote a high-quality learning environment. The study reiterates that student learning in large classes is affected by the levels of classroom incivility, the lecturer’s classroom management abilities, and the availability of resources. This is in line with arguments in the literature and the structural-historical theory, which highlight a mismatch between student enrolment and available resources. As articulated by Eze (2019), for ‘meaningful learning’ to take place, there should be a ‘conducive environment’ for such learning. According to Eze (2019), a quality learning environment is constituted by the physical, psychosocial, and service delivery aspects. Large classes fail to promote a quality learning environment in terms of the physical aspect, this study has reported such instances when classroom space was inadequate for a larger number of students. Participants in this study report instances when classrooms or lecture halls were not properly equipped for a large number of students, there were not enough chairs and desks, and students sit on the floors because of a lack of space and furniture. On the psychosocial aspect, from the interviews, a large class environment is less beneficial for the quality of learning, especially for those who are not equipped with self-regulated learning skills. The study reveals that in large classes not

all students get equal opportunities to participate in classroom activities, for example, in group tasks where there were fewer females than males, females experienced some form of discrimination. This is consistent with the study conducted by Holden (2016), which found that students' level of participation was influenced by gender during group tasks. The study also finds that the levels of female participation were significantly lower when there were more males than females in the group composition (Holden, 2016). On the service delivery aspect, students mentioned instances where the lecturers did not stimulate students' interests by choosing appropriate teaching methods. This is consistent with a study conducted by Rowe (2011) which found that lecturers who were unable to facilitate lessons with excitement did not achieve the instructional goals within a teaching and learning context in large classes.

This study reveals that students in large classes are mainly impacted by classroom incivility, where there were students who disregarded others and disrupted the teaching-learning process at will. Participants of this study pointed out that noise and disruptions were common in large classes, when students entered the class late or exited early, which disturbed those who were trying to pay attention to the lecturer. One of the key findings of this study is that disruptive, uncivil behaviour or general incivility is common in large classes, and when the class is not properly managed the quality of learning is negatively affected. Disregard, insolence for others, and the general atmosphere of disrespect are dominant features of large classes (Knepp, 2012). Clark (2008) argues that most lecturers are only researchers and not trained teachers, they are not equipped with the skills to deal with students' consumerist attitudes and their failure to be responsible for their learning. Interestingly, in this study, it was also indicated that students' uncivil behaviour was common in large classes where the lecturer was a female. These findings were also echoed by Knepp (2012) who found that the student's disruptive behaviour was one of the greatest challenges faced by lecturers especially those who were young and female. Research on classroom disruptions reveals that beyond affecting the well-being of the classroom community, disruptive behaviours interrupt learning, discourage the lecturer, and derail the lecturer's goal for the available lecturer time (Bjorklund & Rehling, 2010). Clark (2008) goes on to note that incivility "may be demonstrated by students or faculty members and...violates the norms of mutual respect in the teaching-learning environment"(p. 38).

This study shows that large classes often test the lecturer's classroom management skills. Comparatively, large classes are more affected by incivility than smaller classes, this study revealed that in smaller classes lecturers easily dealt with unacceptable behaviour. According

to these findings, students expect the lecturer to play a key role in setting the classroom climate, which includes controlling student behaviour, attending to their complaints, and motivating them to excel. These findings are similar to a conclusion by Weger (2018) who found that both class size and instructor's classroom management techniques were the key predictors of student incivility. Interestingly, this study suggests that student incivility is common in large classes. Alhamdan (2007) concluded that classroom management is of great importance for the teaching and learning process. Lecturers have a big influence on the classes they manage; their management styles and teaching styles have an impact on students' behaviour (Eze, 2009).

While this study reveals the negative impact of student misbehaviour on learning, it has also been shown that lecturers sometimes fail to stimulate students' interests by choosing appropriate teaching methods. As articulated by Mulryan-Kyne (2010) "Central to good teaching is ensuring that the correct teaching and learning approach occurs within the appropriate context and the lecturer achieves the instructional goals within the teaching and learning context" (p. 3). The research results reflect that students view the lecturer as a crucial part of the learning process. In addition to being a structural and information resource, students reported that their learning experience depended much on the lecturer's classroom management abilities and teaching style. The lecturer's classroom management skills determine the number of disruptions and noise levels (Eze, 2009). On the other hand, the lecturer's teaching style can create excitement for students around the course content and motivate students to engage with the course material. Furthermore, the results of this study showed that regardless of class size, the student learning experience is dependent on the lecturer's role and the lecturer's ability to enable learning. In line with previous research findings, students' behaviour and academic achievement are dependent on the quality of the relationship between lecturers and students (Louw & Du Toit, 2010)

According to Rowe (2011), when the lecturer is not able to facilitate lessons with excitement students tend to attend lectures irregularly and they see attending large classes as a waste of time and this often leads to an increase in dropout rates. When students become passive and do not participate in class it negatively affects the teaching and learning process as there is limited active learning (Machika, Troskie-de Bruin & Albertyn, 2014). For students, such experience leads to them opting for a surface-level approach to learning, where they only focus on knowing what should be learnt for the exams so they can graduate (Acer & Güçlü, 2017). Results in this study show that there were instances in large classes where students were (directly or

indirectly) denied opportunities to ask questions in class, when the lecturer was unapproachable and when they experienced feelings of anonymity. Grosky et al. (2011) argue that a large class environment is not conducive to interpersonal dialogue which is important for ensuring that teaching and learning take place effectively.

Most of the participants described a supportive learning environment as one in which lecturers adjusted their teaching modes for their students. The same sentiment is shared by Mokoena (2012), who suggests that lecturers need to review their approach and create an environment that is dynamic while appropriately scaffolding and structuring teaching and learning. The teaching modes may include lecturer-student interactions and peer-to-peer interactions, and the use of multi-sensory media such as diagrams, graphs, and flow charts instead of just written text alone. According to Louw and Du Toit (2010), students tend to gravitate more towards activities that require corroboration with peers, and such students are technologically savvy and engage better with multi-sensory media. Participants in this study felt that if diverse teaching modes were used concurrently and in a way that fit students' needs and in line with the required module and learning outcomes, then the issue of class size played an insignificant role. Qualters (2001) found that group learning and discussion-based teaching methods resulted in positive learning outcomes as compared to traditional lecture-based methods. On the contrary, a study conducted by Barns and Blevins (2003) found that the traditional lecture-based methods were superior to the active, discussion-based methods. A recent study conducted by Carpenter (2016) demonstrated that a combination of the two methods was more effective than both methods.

Based on the results of this qualitative study, it can be deduced that there are fewer classroom interactions between lecturers and students in large classes as compared to smaller classes. Students in this study felt that, unlike large classes, smaller classes provided them with more opportunities to interact with the lecturer and they got more individual attention from the lecturers which led to them having feelings of anonymity and were passive in their learning. this is supported by Kuh et al. (2010) who state that limited interactions between students and lecturers result in students remaining anonymous and passive during the teaching-learning process. The sentiment of limited classroom interactions in large classes is also echoed by Bakasa (2011), who found that lecturers had more opportunities for interactive facilitation in smaller classes, which was almost impossible in larger classes. Bakasa (2011) goes on to note that large classes do not enable interactions between students and instructors, and lecturers

were unable to interact with students on a more personal basis in large classes. Previous studies found that limited exchanges occur between students and lecturers, consequently, students remain anonymous and become passive (Machika et al., 2014). Students felt that it was difficult to participate in classroom activities such as debates because interactions among students in the classroom tend to turn into chaotic scenes. They reported that conditions such as lack of space and disruptive behaviour from students made it difficult to interact with both the lecturers and fellow students, as a result, lecture time is lost in settling disputes and lecturers reprimanding students. Students reported the loss of learning time when the lecturers were spending more time on parts of the learning material because some of their fellow students came to class unprepared for the lesson or did not read the prescribed material. The class size theory (CST) suggests that the lecturer will adjust the teaching style to the ability of the least able student (Sapelli & Illanes, 2016). It follows that if the class size is small, there will be more instructional time, and this affords the lecturer the opportunity to tailor the lecture to suit students' individual abilities (Hartfitt & Tsui, 2015). The results of the study are consistent with the CST model which assumes fewer disciplinary problems result in more instructional time and more learning opportunities and ultimately, greater student achievement. However, the students argued that because of limited interactions between the students and lecturers, lecturers tailor their instruction to the whole class without considering the differences in students' capabilities. Previous studies found that large class size was not conducive to student engagement because of the low rate of interaction among students, and between lecturers and students (Matoti & Lenong, 2018).

Regardless of the number of students in the classroom, intervention is necessary to reverse low graduation rates and promote academic achievement in South African Higher Education (Mzangwa, 2019). This study uncovered that those who were not equipped with self-regulating learning skills were affected by large class sizes and were at risk of underperforming. There is a significant body of research that indicates that large class environments pose challenges for both students and lecturers which in turn impact negatively the teaching and learning process. The participants gave insightful views regarding possible ways to promote participation and engagement in large class environments. The submissions encompassed promoting class discussions on what was being learnt, lecturers building good teaching and learning relationships with their students, forming small groups within the class, affording all students a fair chance to get involved in classroom activities, and that the university should consider capacity issues in its admission policies. There is a large body of class research that advocates

for the use of a variety of methods and strategies to foster classroom interactions in large classes and create a favourable environment for student participation and engagement (Moodley 2015; Hornsby et al., 2013; Mulryan- Kyne 2010). While this study focuses on large classes in a contact-based university, the emergence of the COVID-19 pandemic has ineluctably resulted in class size reduction in the institutions of higher learning. Most higher learning institutions have incorporated a virtual approach to their teaching and learning processes and significantly reduced class size (Mseleku, 2020). However, it is unknown whether this change is permanent or more effective than the classroom-based teaching and learning approach (Mseleku, 2020).

5.3 Recommendations

There are several possible strategies that higher education institutions can use to capacitate lecturers and students to deal with the effects of large classes on teaching and learning. The recommendations suggested in the paragraphs that follow are some of which the institution under consideration can use as stepping stones in addressing the effects of large classes on the quality of learning. Other institutions in the same context can likewise use some of the strategies that are recommended by the study, where appropriate.

While participants gave a variety of reasons for choosing smaller classes over large classes, they all agreed that undergraduate classes at the University of KwaZulu-Natal were overcrowded, and they had a negative effect on the quality of their learning. However, large classes do present an opportunity for innovation. Institutions can be innovative in their teaching and assessment strategies to help exploit the benefits of attending large classes. These benefits include diversity in the classroom in terms of culture, language, race, and personalities, being able to share knowledge, and being able to listen and respect other people's views (Kogl, McFall & Kirkwood, 2016). Knepp (2012) suggests that to improve the existing skills of lecturers, lecturers should attend workshops that specifically focus on teaching large classes, not just to be upskilled, but also to share effective strategies they use to deal with classroom incivility in large classes.

Describing a modern-day student, Louw and Du Toit (2010) point out that these are technologically savvy individuals who tend to relate to and appreciate the flexibility and the convenience of an online teaching environment. Furthermore, they relate and engage more with material that is meaningful or anchored within their own experiences (Alber, 2014). This study

recommends a concurrent use of multiple teaching styles, both lecture-based and discussion-based teaching methods, and both online and contact lessons. This could accommodate students' different learning styles and solve some of the challenges posed by large classes on teaching and learning. Participants stated that even though the technology was frequently used in the classroom, lecturers needed to explore the use of online discussions. They suggested that student engagement could be facilitated using diverse strategies and a variety of technology to improve teaching and learning. One of the findings in this study is that students gravitate toward activities that promote social interactions. This study uncovered that students tend to study in groups outside the classrooms, where they share information and assist each other. This study recommends that learning spaces such as libraries and study halls should have more designated spaces for study groups.

Prior studies revealed that student support programmes had a pivotal role in enhancing student success (Andrews and Osman, 2015). Participants in this study echoed the same sentiment, they claimed that they received more individualized attention from the tutors. Considering these findings, this study recommends an increase in tutorials, tutors, and teaching assistants. Moreover, postgraduate students can be trained further to occupy such positions. Arifin (2018) found that student mentorship programmes contributed to academic success and student retention in higher education. This study reveals that online tutorials are beneficial for students' academic achievement. Loji (2012) suggests that tutors in tutorial sessions were likely to provide timely feedback if properly trained. Participants were asked about support mechanisms that they had used when they had difficulties in understanding the course material and who they consulted when they needed help academically. Students said they consulted academic tutors more frequently than any other support programmes offered by the university, they contact tutors for explanations and feedback from assessments and this helps them succeed in their studies.

This study only explores students' experiences of large classes in a Population Studies class, a much larger study involving other disciplines such as engineering and science is needed to get a clearer picture of the nature and magnitude of large class size effects on student learning. This study casts a spotlight on students' uncivil behaviour in large classes, it would be interesting to conduct a study that focused on the link between student anonymity, classroom incivility and class size. It will also be interesting to conduct a study on lecturers' best practices

for managing large classes when both contact and remote (online) teaching modes were employed simultaneously.

5.4 Conclusion

The main aim of the study was to investigate the effects of large classes on the quality of learning in higher education. Students' perceptions of large classes indicated that large classes did less to help promote a conducive learning environment. A large class size environment tends to encourage student anonymity and minimal classroom interactions. The findings show that students view large classes as stressful and less productive when compared to smaller classes. The quality of learning in large classes is negatively affected by high levels of incivility and resource constraints. However, the study also showed that some lecturers could mitigate the effects of large classes through their classroom management techniques. Upon the analysis of the literature and the responses from the interviews, it is apparent that there is a polarity of opinion on the relationship between teaching and learning, and large classes. The argument comes down to, more than anything, an issue of managing classroom incivility, how to effectively deliver the curriculum, and what modes of teaching-learning will best achieve the desired outcomes in a large class size environment.

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Appendices

Appendix one: Ethical approval letter



28 January 2021

Mr Lefa Letsekha (200102938)
School Of Built Env & Dev Stud
Howard College

Dear Mr Letsekha,

Protocol reference number: HSSREC/00002248/2020

Project title: Exploring the impact of increasing class size on the quality of learning in Higher Education:
Perspective of students at the University of KwaZulu-Natal

Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 11 November 2020 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/departments for a period of 5 years.

This approval is valid until 28 January 2022.

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.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4557/3587 Email: hssrec@ukzn.ac.za Website: <http://research.ukzn.ac.za/Research-Ethics>

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

Appendix two: Informed consent form

Information sheet and Consent Form

University of KwaZulu-Natal



Dear Sir/Madam,

I, Lefa Letsekha (lefaletsekha@gmail.com), a Masters student in Population Studies at the University of KwaZulu-Natal, wish to invite you to participate in a research project titled:

Exploring the impact of increasing class size on the quality of learning in Higher Education: Perspective of students at the University of KwaZulu-Natal

The aim of this study is to investigate the impact of large classes on the quality of learning in Higher education. It also seeks to understand how classroom processes can mediate class size effects.

You have been chosen to participate in this study which involves answering on telephonic interviews because you are a postgraduate student in population studies. The study is expecting to 20 students to participate on telephonic interviews, which will be recorded. Your participating in this project is voluntary. You may choose to withdraw from participating from the study at any point or choose not to answer any question that you do not feel comfortable answering and no penalty will be attached to any of such actions. The information that will be gathered from this study will be used in my thesis writing and may be published in academic journals and presented orally. However, your identity will be protected at all times and will only be made known if you so wish. Unfortunately, I will not be able to afford you any payment for your participating in this study; as such there will be no financial benefits. I hope you will take the time to participate.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number_____). In the event of any problems or concerns/questions you may contact the researcher at (provide contact details) 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

PrivateBag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

CONSENT

I have been informed about the study entitled (provide details) by Lefa Letseka.

Yes..... No.....

I understand the purpose and procedures of the study (add these again if appropriate).

Yes..... No.....

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

Yes..... No.....

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

Yes..... No.....

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

Yes..... No.....

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

I agree that the interview process will be electronically recorded and all collected information will be kept with confidentiality and high security. Yes..... No.....

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

_____ Signature of Participant	_____ Date
_____ Signature of Witness (Where applicable)	_____ Date
_____ Signature of Translator (Where applicable)	_____ Date

Appendix three: Interview guide

Section A: Biographical Information

Gender	
Current level of study	
Class Size	
Years in higher education	
College of study	
Age (Optional)	

Section B: Questions

What is your understanding of large class size?

What are your experiences in large classes?

How have your experiences impacted your learning?

How do you think that class size affects your academic performance? Concentration?
Understanding? Performance?

How does the size of your class affect your understanding of the subject material? Can you think of an example?

What are some of the challenges of a large class size?

How do you cope with these?

How are your interactions with other students in the class affected by the size of your class?

How does the class size affect your participation in class activities?

How would you say the class size affects your interactions with instructors/ lecturers in the class?

How does large class size affect the quality of learning?

Appendix four: Gatekeepers letter



12 October 2020

Lefa Letsekha (SN 200102938)

School of Built Environment and Development Studies College of Humanities

Howard College Campus UKZN

Email: lefaletsekha@gmail.com MaharajP7@ukzn.ac.za Dear Lefa

RE: PERMISSION TO CONDUCT RESEARCH

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

"Exploring the impact of increasing class size on the quality of learning in Higher Education: Perspective of students at University of KwaZulu-Natal."

It is noted that you will be constituting your sample by conducting Telephonic interviews with Postgraduate students in the School of Built Environment and Development Studies (Taking in account the regulations imposed during lockdown ie restrictions on gatherings, travel, social distancing etc. Zoom, Skype or telephone interviews recommended) on the Howard College campus.

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

Ethical clearance number;

Research title and details of the research, the researcher and the supervisor;

Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;

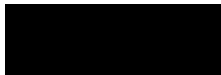


Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

gatekeepers approval by the Registrar.

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

Yours sincerely



DR KE CLELAND: REGISTRAR (ACTING)

Office of the Registrar

Postal Address: Private Bag X54001, Durban, South Africa **Telephone:** +27 (0) 31 260 8005/2206 **Email:** registrar@ukzn.ac.za **Website:** www.ukzn.ac.za