Small classes and rotational timetables as effective curriculum-recovery teaching methods during Coronavirus-19 pandemic

By

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Dissertation submitted in fulfilment of the requirements for the degree

Master of Education

in the Faculty of Education and Social Sciences at the

Cape Peninsula University of Technology

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Mowbray Campus

2024

Cape Peninsula
University of Technology

DECLARATION

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

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ABSTRACT

When the Coronavirus 2019 (COVID-19) pandemic broke out in South Africa in 2020, many aspects of life, including the education system, were disrupted. Schools in almost all countries were shut down to observe social distancing, which was meant to prevent the spread of COVID-19 infection. In South Africa, a hard lockdown of the country was instituted during which teaching and learning came to a standstill, as schools were shut down too. Nonetheless, teaching and learning continued in schools that could afford to teach online. Schools that were unable to teach online suffered immense loss of teaching and learning time, leading to their inability to cover the academic curriculum. Initially, the implemented hard lockdown stopped all learning institutions from learning in person on campus and this was later named Level Five Lockdown. As infection numbers dropped, a lower level of lockdown was put in place. Lockdown levels were numbered from level one to five, with one having the least restrictions and level five having the most restrictions. Schools had to find ways to recover the teaching and learning time lost to COVID-19 lockdown by adopting small classes and rotational timetable strategies. Abundant research has been conducted on the impact of the COVID-19 pandemic on teaching and learning. However, there is a dearth of research on the effectiveness of small classes and rotational timetables as curriculum-recovery methods during the COVID-19 pandemic. This qualitative case study research investigated teachers' perceptions of whether and how these strategies helped them to recover the academic curriculum lost during the COVID-19 lockdown. Data was collected through open-ended Google Form questionnaires sent to 13 teachers in three Western Cape Education Department (WCED) schools that predominantly had large classes before the outbreak of the COVID-19 pandemic. Data was analysed thematically using colour-coding and emergent themes. Results revealed that small classes and rotational timetables contributed immensely to the recovery of the lost teaching and learning time. Participants reported on how these strategies helped them to manage learner behaviours and offer individual attention, both of which contributed to the quick recovery of lost teaching and learning time. They further observed improved academic performance among learners, and that teachers were more able to identify gaps in learners' knowledge much more quickly and to implement support plans more promptly than they had in large classes. Nonetheless,

participants reported encountering challenges that sought to threaten the effectiveness of these strategies. The conclusion that can be drawn from this study is that since the COVID-19 pandemic is not the last pandemic that will occur, and due to the threats of the climate change, the Department of Basic Education and schools should have contingency plans in place for dealing with crises that can adversely affect smooth teaching and learning in the future. More research is needed to investigate other strategies that the other countries employed to recover the lost teaching and learning time during the COVID-19 pandemic.

ACKNOWLEDGEMENTS

This study would not have been possible without the help of many people who have helped in so many different ways. I wish to thank the following people:

- First of all, Jesus, who gave me the strength, patience and love for this work and topic.
- My two boys, Micah and Ethan, who have been patient in me giving up time with them on odd occasions to continue my work, and still continue to love me no matter what.
- My incredible wife, Cristi, for her love and support in my studies. She is my constant and absolute support and encourager.
- My supervisor, Prof Lungi Sosibo, for hours of hard work and constant support. This paper would simply not exist without her patience, wisdom and guidance at every turn. I feel her knowledge and insight is certainly invaluable.
- The principals and teachers at the schools where my study was conducted: their support and wonderful conversations and guidance aided immensely to this body of work.

Thank you to everyone mentioned above, this was a wonderful journey and it simply would not have happened without every single one of your love and time. Thank you!

Table of contents

List of acronyms

Acronym	Definition and meaning
ADE	Advanced Diploma in Education
ACT	Advanced Certificate in Teaching
BBC	British Broadcasting Corporation
BED	Bachelor of Education Degree
CAPS	Curriculum Assessment Policy Statement
CDC	Centre for Disease Control and Prevention
COVID-19	Coronavirus disease 2019
CoGTA	Department of Co-operative Governance and Traditional Affairs
CPUT	Cape Peninsula University of Technology
DBE	Department of Basic Education
DMG	District Management Group
FP	Foundation Phase
HDE	Higher Diploma in Education
IEP	Individualised Education Plan
IP	Intermediate Phase
NASUWT	The National Association of Schoolmasters Union of Women Teachers
PPE	Personal protective equipment
RAPID	Reach, Assess, Prioritise, Increase, Develop
SACMEQ	Southern and Eastern African Consortium for Monitoring Educational Quality
SOP	Standard Operating Procedure
STAR	Tennessee Student Teacher Achievement Ratio
StatsSA	Statistics South Africa
TIMSS	Trends in International Mathematics & Science Study
USA	United States of America
WCED	Western Cape Education Department
WHO	World Health Organization

CHAPTER ONE

1.1 Introduction

On 11 March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic (Cucinotta & Vanelli, 2020). The virus had a major impact on the world, as it was extremely contagious. In the early months, it was often quite fatal for anyone who contracted it (Read *et al.,* 2020). By the sheer number of casualties and deaths, COVID-19 ranks as one of the ten deadliest plagues in history (Piper, 2021). Other sources support this notion, including Tabatabai et al. (2023), and more recently, Ghafari et al. (2024), who speak of how there is still a strong presence of COVID-19 symptoms in 2024. Looking at official statistics alone, it is evident that COVID-19 was responsible for nearly one in every twenty deaths worldwide since 2020 (Troeger, 2023).

Hampshire *et al. (*2024) have written on how the COVID-19 virus has impacted memory and cognition levels since it began in 2020, and still leaves terrible effects even in 2024. Read *et al.* (2020) have documented how infections and deaths rose rapidly as the world struggled to contain and stop the spread of the deadly virus. Between the chaos of the virus and the many suffering from the ailments it brought about, scientists discovered that the virus was spread from person to person in close contact through airborne particles and droplets (Mandavilli, 2020). This meant that densely populated areas saw larger increases in COVID-19 infections and deaths, due to many people living closer to one another, as well as due to the airborne droplets containing the virus moving easily from one person to another (Martins-Filho, 2021).

With the availability of information on how quickly the COVID-19 virus was spreading, by March 2020, well over 100 countries had implemented hard lockdown measures to limit the movement of people and thus the spread of the virus (British Broadcasting Corporation (BBC), 2020). Onyeaka *et al*. (2021) note that by 11 March 2020, almost all the countries around the world had gone into a hard lockdown. Koh (2020) reports that in Wuhan, China, the lockdown had already been implemented as early as 23 January 2020. Limiting the movement of people dealt with the immediate issue of the

virus and how quickly it spread. However, for many people, it meant not being able to go to work, which impacted many economies around the world (Pak, 2020).

The lockdown also led to schools around the world closing, as they were considered densely populated settings. The closing of the schools meant the teachers and learners were not allowed to be on the school campus for the duration of the initial lockdown. On 15 March 2020, the South African government declared the COVID-19 pandemic a national disaster, and that schools were to close on 18 March 2020, as reported by Statistics South Africa (StatsSA, 2022). The government (2020) issued an official gazette outlining the national disaster caused by the COVID-19 pandemic, and the dates on which the initial hard lockdown was set to take place, which was from 27 March 2020 to 16 April 2020 (Department of Co-operative Governance and Traditional Affairs (CoGTA), 2020). The short time frame of only three days (from 15 March 2020 to 18 March 2020) caught many schools unprepared for the hard lockdown and how it would impact teaching and learning going into the coming months (StatsSA, 2022). The announcement was that the hard lockdown was only set for three weeks during the first term of 2020 (Spaull & Van Der Berg, 2020). The assumption was therefore that the schools would not lose too much teaching and learning time of the first school term. Whatever the assumption was during that time, it was clear that if the situation was not handled correctly, it would be detrimental to learners (Adu *et al.,* 2022).

However, as the number of infections rose, the President announced on the 9 April 2020 that the duration of the lockdown was extended and instead of the lockdown ending on the 16 April 2020, it was set to end on the 30 April 2020. During this extension of the lockdown, only certain economic activities could open up again, but the schools were still closed (SAHistory, 2020). This was an international occurrence. It eventually led to the first year of the pandemic having almost half of the world's learners affected in some way, through for example, absence from school, no access to school-based feeding schemes, no school-based extramural activities, and not being in a safe school environment (Vivier & Gallo, 2021; Soudien, Reddy & Harvey, 2022). Hoadley (2020) adds that the extension of the lockdown eventually meant that the duration of the lockdown was 10 weeks instead of the initially announced three weeks. The lockdown eventually had varying levels from level one to level five that impacted school attendance.

On global average, schools were completely closed for twelve to sixteen weeks (Schleicher, 2020). In South Africa, from the start of the pandemic in March 2020, 74,8% of children between the ages of 0 and 6 years in Early Childhood Development (ECD) did not attend school. Of these children, eight out of ten attended schools with feeding schemes (StatsSA, 2022). The closure of schools meant that many children were not learning, and those children dependent on feeding schemes from schools were not necessarily receiving the meals they would normally only get at school (Matidza *et al*., 2023).

In the context of South Africa, the extended lockdown led to learners and staff not being able to return to schools when the second term started. (Vivier & Gallo, 2021). The lockdown impacted all learning institutions, including creches, preprimary schools, primary schools, high schools, and even universities (Hoofman & Secord, 2021).

Initially, remote learning programmes were put in place by some schools, but this did not guarantee that all learners participated in the instruction because not all learners had access to digital devices to work remotely (StatsSA, 2022). Further, some learners could access devices or the internet during certain hours only when parents were at home or when devices were available, depending on their individual circumstances (StatsSA, 2022). Most of South African learners simply did not have access to the internet at home. According to Malinga (2022), only 20% of South African schools had internet connection for learners, while the other 80% did not. Similarly, learners did not have access to remote learning programmes that some schools set up during the hard lockdown. Clearly, online learning and teaching was problematic for both learners and teaching staff (World Economic Forum, 2021). The onset of the virus was so quick that many learners were simply not ready for remote teaching and learning due to lack of infrastructure, poor internet connection, unavailability of digital devices, and ill-preparedness of the teaching staff to teach online during the lockdown (Chetty & Motala, 2021).

The impact of the COVID-19 virus and the lockdown measures in schools impacted more than the academics. For example, Elharake et. al (2022) conducted a study on the impact that the COVID-19 pandemic had on learners. The results indicated issues of concern in children and students that arose from the COVID-19 pandemic. These included feelings of anxiety, depression, distress and fatigue among learners. Some schools experienced vandalism and theft during this time, which led to issues of safety and in some cases the inability to continue with work, as facilities were damaged (UNICEF, 2021).

Overall, South Africa experienced four large periods of increases in COVID-19 infections (Mahase, 2022). These increases severely impacted the decisions about opening schools (Engzell, Frey & Verhagen, 2021). Further, school closures ultimately affected the academic performance of schools (Engzell, Frey & Verhagen, 2021). Schmidt *et al.* (2021) found that children and adolescents developed many emotional and mental disorders during 2020 and 2021, which were the first two years of the pandemic. According to the United Nations Children's Fund (UNICEF, 2021), the Department of Basic Education (DBE) had an important task to return learners to school, as learners were up to a year behind in their schooling as early in the pandemic as July 2021.

Returning learners to schools was not an easy undertaking, as some schools could not open safely due to the limited space in the classrooms (Shepherd & Mohohlwane, 2021). With the need for social distancing, spaces between learners in the classroom meant that the learners essentially needed more physical distance in each classroom, thus limiting how many learners could be placed in each classroom (Moonasamy & Naidoo, 2022). This in turn meant classes had to be split to maintain the social distancing measures, and that extra classrooms were needed. This further meant that extra staff were needed to supervise the extra classes of learners (Shepherd & Mohohlwane, 2021). This challenge would in turn create another situation where learners in close contact or small spaces would potentially fuel an increase in infections again (Ertem *et al.,* 2021).

Every school in South Africa had a different arrangement on their campuses with regards to infrastructures such as the number and size of classrooms, the number of

desks in each classroom, as well as the number of staff available to possibly split classes into smaller, well-spaced classes (Moonasamy & Naidoo, 2022). Returning learners and staff to school safely was heavily dependent on each school's particular context and situation. In many cases, there were also learners and staff who had to be individually accommodated because they had comorbidities, such as obesity, diabetes, hypertension, or old age (Sanyaolu, 2020). This was done because they were regarded as more susceptible to a fatal outcome if they caught the virus.

On 1 June 2020, the DBE announced that grade 7 and 12 learners would be allowed to return to school on campus on 8 June 2020. As each school had their own particular circumstances to navigate the safety of learners and teachers, some schools opted to deviate from the DBE's plan to reopen schools, as school management found that they could not open safely in their individual situations (Macupe, 2020). This meant that in some cases, schools opened even later than others, further disrupting learning. Macupe further states that up to 5% of schools did not reopen at the same time as other schools on 8 June 2020. Obuseng (2021) reported that the majority of South African students felt that the hard lockdown jeopardised their futures and academic pursuits and robbed them of effective learning. Coupled with this were poorly-resourced schools which could not offer alternative teaching methods for their learners due to the lack of digital devices and internet access. All these factors contributed to immense loss of teaching and learning time and the coverage of the academic curriculum for many teachers and learners.

'Curriculum recovery' is the concept of educational recovery relevant to correcting a disruption in learning (Johnson, 2022), specifically in this case from learning losses experienced due to the lockdown from the COVID-19 pandemic. The Department of Basic Education described curriculum recovery, in the context of the COVID-19 disruptions, as a set of plans, teaching methodologies, and adjustments that needed to be made so that there were as few learning losses as possible (DBE, 2023). As the pandemic continued, and more disruptions to class time were experienced, it was necessary to constantly adapt how teaching and learning was happening so that the learners could continue with their grade work as much as possible. In some cases curriculum recovery was done by splitting classes, extended class time, focusing on

more important subjects or content, giving out homework packs, adjusting term dates and even hiring extra teachers or teaching assistants.

1.2 The standard operating procedure

According to the World Health Organization (WHO) (2023), the Department of Basic Education standard operating procedure (DBE SOP) document had guidelines very similar to what was recommended internationally in other countries. Internationally, the DBE SOP required that people, including learners and staff, maintain a social distance of at least one metre between one another in order to prevent the spread of the virus and to minimise infection. Initially, South Africa had set the distance at 1.5 metres, but when the number of infections dropped, the country reduced the social distance to one metre, in line with the WHO requirements. The WHO (2023) further advised nations and schools globally to ensure that everyone kept their hands clean by constantly sanitising and washing their hands before eating or touching their faces, and that sanitising stations should be made easily accessible at all institutions and schools. In addition, the WHO required everybody to wear face masks indoors and outdoors when in public, to open windows and doors in rooms to increase ventilation, as well as to stay at home when unwell, especially when displaying symptoms of the COVID-19 virus (WHO, 2023).

The major endeavour that the DBE undertook was to open schools safely and not create hotspots where the virus could spread and impact families even more than it had already done (DBE, 2020). In view of the particular situations of schools, they needed individual guidelines on how they could reopen safely. The DBE facilitated this decision-making process by developing the DBE SOP document for schools to follow (DBE, 2020a) in accordance with the WHO (2023) requirements. This document guided schools on how they should be prepared for the learners to return to school after the initial hard lockdown. The guidelines that schools had to follow to limit the spread of the COVID-19 stated that all individuals, learners and staff had to be 1,5 to 2 metres apart at all times. Essentially, the DBE SOP developed by the DBE included all the guidelines as set out by the WHO. Hatefi et. al (2020) aver that extensive social

distancing and sanitation techniques were used in South Africa and in learning institutions.

Implementing the DBE SOP had many implications for schools, one of which was reduced class sizes to enable social distancing among staff and learners. Schools had to use classes that allowed large spaces between learners (social distancing) to safeguard their health and that of the teachers. However, with limited physical space in classrooms in some schools, this immediately put a limit on the number of learners who could access classrooms at the same time. Schools that normally had large class sizes had to find ways of reducing the numbers of learners in each classroom. One of the best ways for schools to achieve this goal was by splitting their large classes to smaller ones using rotational timetables (DBE, 2020b). Implementing this strategy meant that schools would have smaller classes per grade than before the COVID-19 pandemic. It could therefore be argued that the DBE SOP, which developed from the WHO requirements, was a catalyst for the implementation of small class sizes that in turn led to rotational timetables in schools during the COVID-19 pandemic. The concept of rotational timetables is presented in more detail in the literature review.

1.3 Statement of the problem

The main focus of the DBE SOP document was the importance of learner spacing and the number of people in classrooms and campuses. Therefore, schools that had small class environments already in place prior to the outbreak of the COVID-19 pandemic were at an advantage, since they were already complying with social-distancing requirements. It is clear that most of the DBE SOP recommendations were concentrated on schools with large class sizes as it is these classes that had to be reduced to small class sizes (DBE, 2020a). Hoofman and Secord (2021) had already conducted research on COVID-19 and its impact on education. COVID-19 caused major disruptions to academic work, social development, economies and the cash flow of schooling institutions and even safety of learners (Joshi *et al.,* 2023). Other research reveals that it has left lingering effects of incomplete curriculum work and gaps in learner knowledge that will be aggravated over the next few years as those learners progress through the grades (Dorn *et al.,* 2021). What remains to be ascertained is how rotational timetables and reduced class sizes impacted curriculum recovery in

schools that generally had large classes before the outbreak of the COVID-19 pandemic.

1.4 Purpose of the study

The purpose of this study was to investigate the perspectives of teachers on how reducing class sizes and using rotational timetables affected academic curriculum recovery in schools that predominantly had large classes before the outbreak of the COVID-19 pandemic.

1.5 Objectives

The objectives of this study were:

1.5.1 To establish the effect of small classes on curriculum recovery.
1.5.2 To explore the contribution of rotational timetabling on curriculum recovery.
1.5.3 To uncover the challenges teachers experienced with the use of rotational timetables and small classes as curriculum recovery strategies.

1.6 Research questions

1.6.1 Main question

What are teachers' perspectives on small classes and rotational timetables as effective curriculum-recovery strategies during the Coronavirus-19 pandemic?

Sub-questions

1.6.2 What effect did small classes have on curriculum recovery?
1.6.3 How did rotational timetabling contribute to curriculum recovery?
1.6.4 What were teachers' challenges with the use of rotational timetables and small classes as curriculum-recovery strategies during the COVID-19 pandemic?

1.7 Context of the study

This study was conducted at three schools falling under the Western Cape Education Department in South Africa. These schools fall under the quintile level one category, due to the low socio-economic conditions of the communities in which they are based. The DBE has created five levels of quintiles (Mestry, 2020). Quintile level one and two are schools that receive little to no fees from parents. Quintile three schools receive a moderate level of fees from parents, whereas quintile levels four and five are in more affluent areas and can collect fees from parents (Mestry, 2020). Quintile level one and two schools need more support financially from the DBE, while quintile level four and five need very little financial support (Isaacs, 2020). Isaacs explains that each school receives a specific amount of money per year for each learner. The amount of money given depends on the quintile level of the school, and more money is now given to lower-level quintiles than higher levels (Van Dyk and White, 2019). Flowing from the quintile level of schools and the related poorer communities surrounding them, it is a pattern in quintile level one and two schools to have large classes averaging more than 45 learners to a teacher in South Africa (Kohler, 2022). The schools selected for this study fell into the quintile one category with the attributes of large or overcrowded classrooms. Before the COVID-19 outbreak, class sizes in these schools ranged between 35 and 50 learners per teacher. However, with the implementation of rotational timetables during the COVID-19 pandemic, class sizes decreased to 15 to 25 learners per teacher.

These schools comprised two phases: the Foundation Phase and the Intermediate Phase. The phase levels are defined in detail under the section on definition of terms below. Suffice to say that the Foundation Phase is for learners from grade R (Reception) year to grade three, with the learners' age ranging from six to nine. In contrast, the Intermediate Phase comprises grades four to six, with the learners' ages ranging from 10 to 12.

1.8 Significance of the study

This study is significant for future directions in education, as it will inform education policymakers and teachers about the importance of adopting small classes during a crisis in education, based on the perspectives of teachers in this study. Although the COVID-19 pandemic has passed, it is likely not to be the only crisis that will adversely affect the education sector. The likelihood is that there will be other pandemics in the future that will force teachers to resort to rotational timetabling and small class sizes. This study will inform decisions on whether these strategies will be appropriate for those crisis situations as a curriculum-recovery method. It will also inform curriculum policy and practise if another situation similar to the COVID-19 pandemic should occur. This research will also contribute to the existing body of knowledge in the area of curriculum and class sizes, which are areas that the DBE has not addressed effectively, especially in the Foundation and Intermediate Phases.

1.9 Research methodology

This section presents a synopsis of the methodology used in this study. A detailed description of the methodology employed is presented in Chapter Three.

1.10 Sampling procedure

In this study, 13 participants were purposely selected from three primary schools run by the Department of Basic Education in areas considered historically disadvantaged in the city of Worcester in the Western Cape of South Africa. They were chosen because of their experiences of teaching large classes of more than 35 learners and then having to adapt to reducing the class sizes to smaller classes of fewer than 15 during the COVID-19 pandemic, in accordance with the DBE SOP.

1.11 Research paradigm

An interpretive paradigm was used in this qualitative research, as obtaining the participants' subjective perceptions was vital. Qualitative research and an interpretive paradigm work well together seeking to find and discuss a lived experience with

possible complicated concepts to define. Being able to allow the participants to discuss freely, without limitation, was key to finding out more about their experience during lockdown.

1.12 Research design

As the study concentrated on the changes that the COVID-19 pandemic brought about, a case study was used as it helped to seek an understanding of the complexities that the lockdown brought on with rotational timetables and small classes, and how these changes were experienced by the participants.

1.13 Data collection

Data was collected using a Google Forms survey, which contained 12 open-ended questions about the teachers' experiences of using small classes and rotational timetables during the lockdown, and how these changes affected curriculum recovery during the COVID-19 pandemic (see Appendix A for the questions in the Google Forms survey). Google Forms were chosen to collect data as it gave participants freedom to complete the questionnaire anywhere and the feedback was sent to the researcher as soon as the questionnaire was completed. The researcher also intended to conduct interviews after the questionnaires were completed, using the same questions from the questionnaire, to give the participants space to ellaborate. The researcher had permission from the WCED to approach schools between 1 August 2023 and 30 September 2023 and during this time he set up meetings with the principals to explain the study and gave the participants two weeks to complete the questionnaire. Using qualitative research in this study helped design questions that valued the participants' lived experience.

1.14 Data analysis

Data analysis was done through colour coding and identification of themes in the participants' answers to the questionnaire. From there, the themes were grouped together and participants answers were compared to one another and discussed where similar and constrasting experiences were found.

1.15 Research ethics

Ethics clearance was acquired from the Cape Peninsula University of Technology Ethics Committee (the ethics clearance letter can be found in Appendix C). Permission to conduct research at the selected government schools was acquired from the Western Cape Education Department (the research approval letter can be found in Appendix D). Research participants were informed about the purpose of the study. Written consent was obtained from the principals of the sampled schools (see Appendix B). Consent to participate in the study was included in the Google Forms sent to participants (see Appendix A Question 1). Confidentiality of the participants was assured by the use of pseudonyms in the presentation of the data and findings. Participants were also informed that they did not have to take part in the study but their particpation was voluntary. Ethical guidelines are explained in detail in Chapter Three.

1.16 Definition of terms

COVID-19: In this study, the term “COVID-19” is used to describe a contagious disease caused by the SARS-CoV-2 virus which killed many people from its outbreak in 2019 in Wuhan, China (Centers for Disease Control and Prevention (CDC), 2024). The COVID-19 virus first attacks the victims’ lungs (and other organs), limiting the amount of oxygen the person is able to take in. The victims end up with less oxygen in their body than they should have. Victims can pass away with a few days of contracting the virus. From the beginning of the outbreak of the COVID-19 pandemic, it is estimated that 6,1 million deaths were reported from the virus by 21 March 2022 (Oboza *et al*., 2023).

Curriculum recovery: The phrase is a concept of educational recovery relevant to correcting a disruption in learning (Johnson, 2022), specifically from learning losses experienced due to the lockdown from the COVID-19 pandemic. The Department of Basic Education described curriculum recovery, in the context of the COVID-19 pandemic, as a set of plans, teaching methodologies, and adjustments that were needed to be made so that there were as few learning losses as possible brought on from the disruptions of the COVID-19 pandemic (DBE, 2020b). As the pandemic

continued, and more disruptions to class time were experienced, it was necessary to constantly adapt how teaching and learning was happening so that the learners could continue with their grade work as much as possible. In some cases curriculum recovery was done by splitting classes, extended class time, focusing on more important subjects or content, giving out homework packs, adjusting term dates and even hiring extra teachers or teaching assistants.

Online learning: “E-learning” or “online learning” has been used to describe electronic learning, education or training that occurs online over the internet (Fox, 2023). Online learning, also known as distance education, refers to the delivery of educational content through the internet (Asad, 2023) or other media such as the internet, workpacks, educational television, video conferencing and radio broadcasts (Khazanchi *et al.*, 2022).

Phase levels: The term “Foundation Phase”, is used in South Africa to describe the first formal phase of primary school and it includes grade R, one, two and three. Children enter the grade R year in the year they turn 6 years old. The Foundation Phase in South Africa is the first legally compulsory phase where a child must go to school or be registered for home schooling (Dhlamini, 2022). The “Intermediate Phase” term is mentioned and this is used to describe the second phase of formal school in primary school in South Africa, grades four, five and six, typically for ages 10 years old to 12 years old (Dempster, 2016).

Lockdown: The term explains the system of quarantine policies or temporary conditions placed on an area by the local government (Woc-Colburn & Hidalgo, 2022). In South Africa, this was a period of time where the government imposed the lockdown at leverls varying from one to five. One had the least restrictions on economic and social activity while five had the most restrictions. Hard lockdown was the initially announced three week lockdown from 27 March 2020 to 17 April 2020 when the entire country was restricted to staying at home and only certain people could move around such as doctors, firefighters, policeman and other essential workers (CoGTA, 2020) . This hard lockdown was extended before the lockdown levels were announced with varying restrictions in each level. The five levels of lockdown listed the restrictions and it made it much easier for South Africans to follow. Levels were announced and

followed based on the number of infections of the COVID-19 virus (Republic of South Africa, 2021).

Platoon system: This term is used to explain a system of learning where two sets of learners or classes use half the school day or every second day (Hood, 2010). Ducharm (2020) discribes the historical usage of platooning in three main categories. Firstly, teachers as subject specialists, with several teachers taking one class while the class moves around to each subject specialist. This model is seen to allow the learners to receive instruction from a teacher who specialises in a subject and knows the best method for learning and teaching this subject. Secondly, as a specialised grouping of learners based on their academic levels. This is done to keep learners of the same academic level together so that they can be worked with at the same level as opposed to having varying ability levels in one class. Lastly, as block scheduling of learners so they only go to classes at specific times as opposed to being at school the whole day (Ducharm, 2020).

Rotational timetable: The term is used to describe a programme of alternate days of classes at school when certain classes came to school on campus and others stayed at home to do remote work or online work and they alternated when they came in (Brom *et al*., 2023). Also known as alternating timetables or block scheduling, rotational timetables describe a system of scheduling where learner classes alternate either days of the week or lessons in the day. The schedules are usually alternating repeated lessons to intensify the lesson support (Lewis *et al*., 2003).

The Western Cape Education Department (WCED): This term refers to the local provincial basic education office that is responsible for governing schools and schooling in the Western Cape province of South Africa. Each metropolitan district has a more localised office that represents the Western Cape Education Department (Dreyer, 2013).

1.17 Limitations of the study

The limitation of this study is the small sample size of participants. The researcher intended to have more participants, but only 13 participants responded to the Google

Forms questionnaire sent to them. To have more participants would have yielded richer data. Nonetheless, this limitation was addressed by asking open-ended questions, thus allowing participants who responded to have more space to express their opinions on the questions asked. They were not limited in how long their answers were to be on each question. In addition, they were given two weeks to respond to the questionnaire, thereby giving them enough time to engage with the questionnaire before submitting it. The other advantage is that results of qualitative studies are not generalised to other contexts. This non-generalisability of results addressed the limitation of a small sample size.

Another limitation to this study is that the researcher used convenience sampling due to the constraints of full-time employment. Only schools in the same town as the researcher could be used. To address this limitation, the researcher selected schools that met certain criteria that displayed diversity in culture and race, thereby enriching the data collected.

1.18 Layout of the thesis

CHAPTER ONE presented an Introduction to the study. It explained the context of the COVID-19 pandemic, and how this pandemic created a need for the introduction and implementation of DBE SOPs and rotational timetables, which led to small classes in schools that generally had clarge classes before the outbreak of the COVID-19 pandemic. In addition, Chapter One introduced the problem statement, the aim and objectives of the study, as well as the research questions. Furthermore, the chapter briefly covered the research methodology that was used and the research ethics applied, both which are presented in more detail in Chapter Three. Chapter One also included the definition of the keywords pertinent to this study, the significance of this research and how it could be used for future situations and crises, the limitations of the study, as well as the layout of the thesis.

CHAPTER TWO examines pertinent literature on the reasearch topic. It starts by unpacking existing research around the conceptual framework of rotational timetables, small class size and their relationship with the quality of teaching and learning. Chapter Two further addresses how the COVID-19 Pandemic impacted schooling and the

usual functioning of each school, especially schools from a disadvantaged background that already had to struggle with adverse circumstances.

CHAPTER THREE outlines the research methodology that was used. It presents the research paradigm, design and approach. Furthermore, this chapter presents the sampling procedure in relation to participant and site selection. In addition, the chapter details how data was collected and analysed. It explains how trustworthiness was achieved, the researcher's position and ethics surrounding the topic. Lastly, the chapter reports on the workplan that was followed with regards to the timeframe.

CHAPTER FOUR is focused on the data received and the analysis of said data. It presents the themes that emerged during the analysis of data collected from participants.

CHAPTER FIVE presents the analytical discussion of results. It ends with the conclusion and recommendations and how this study can be used for future research.

1.19 Conclusion

The COVID-19 pandemic brought about sudden adjustments that needed to be put in place for schools to be able to continue safely and to cover the school curriculum. Those adjustments were informed by the DBE SOP, whose origins was the WHO requirements. These adjustments included employing rotational timetables which led to splitting classes to minimise their sizes. These measures were taken to maintain safe social distances among learners to prevent the spread of the COVID-19 virus. In turn, these strategies were used to cover the academic curriculum that had fallen behind due to the lockdowns instituted by the South African government. Although abundant research has been documented on the impact of the COVID-19 pandemic, a need arose to address the dearth of research on how rotational timetables and small classes facilitated academic curriculum recovery. Having addressed the background of this study in detail, the following chapter presents pertinent literature related to the topic of this research.

CHAPTER TWO

LITERATURE REVIEW

The literature that is pertinent to this study is presented in this section. It includes the following subthemes: COVID-19 and its impact on schooling, guidelines for teaching during the COVID-19 pandemic, contributions of the quintile categorisations to large class sizes and poor quality of teaching and learning, the impact of large class sizes on teaching and learning, global perceptions of small class sizes, the influence of small classes on the quality of teaching and learning, and the implementation of rotational timetabling during Coronavirus-19 lockdown.

2.1 COVID-19 and its impact on schooling

As the COVID-19 pandemic put pressure on schooling as a whole, it is important to understand how it impacted schools and then how it led to the need for small classes and rotational timetables in order for schooling to continue.

With the existing inequalities in schools across South Africa in terms of funding, facilities, and security, the impact of the COVID-19 pandemic varied from school to school (World Economic Forum, 2021). Mohamed (2021) argues that the pandemic pushed inequality to much higher levels in South Africa, due to the fact that there was initially a great need for internet access for remote learning, and many South African homes did not have a computer, let alone internet access. Mohamed further contends that at the start of the COVID-19 pandemic in March 2020, nationally, only 22% of households had a computer and only 10% had internet access.

In certain provinces, these percentages were even lower than the national average. This situation translated into many learners not being able to learn when remote learning was introduced during the COVID-19 pandemic, as some schools did not have sufficiently trained teachers to teach through this teaching and learning mode (Chomunorwa & Mugobo, 2023). As a result, many learners were left behind. Consequently, when learners returned to schools after the COVID-19 lockdowns, they were at completely different levels of learning, because some had been able to work

remotely and others were not. Anciano *et al*. (2020) expresses how communities were vastly different when it came to remote learning, that is, how one community was thriving and children were able to continue with online lessons while in other communities in the same town, children could not learn or work. These inequalities widened the knowledge gap among learners even at the same school during the COVID-19 pandemic (World Economic Forum, 2021). StatsSA (2020) recorded only 11,7% of schools in South Africa offering remote learning. Every minute of not being at school led to more learners being left behind in their education.

In the context of South Africa, these differences in the learning gaps became worse with different grades returning to schools at different times, and different schools having different levels of preparedness for the return of learners (Baloyi, 2021). The Department of Basic Education issued a gazetted plan about returning all learners to school after the hard lockdown. The plan included how the first grades to return to school would be grade seven and twelve (DBE, 2020b; DBE, 2023). After two weeks, grade six and eleven would join and then the next two weeks the other grades. This plan did change on 3 July due to an increase in infections of COVID-19. Although it did change due to the infection rate, schools were allowed to apply to deviate from this plan if they felt their school was not ready and therefore not safe (DBE, 2023). Some schools applied for deviations from the Department of Basic Education's plan to return to campus, as the school leadership felt their individual schools were not ready to let staff and learners return safely (Nchabeleng, 2020). Nchabeleng describes the many issues that were delaying schools from reopening after the lockdowns. Due to some learners and staff having comorbidities that put them at a high risk of death from the virus, attendance was very low when schools reopened. Having staff absent complicated the splitting of large classes, which was highly needed to create the necessary social distancing spaces.

As schools had little time to respond to the hard lockdown announced in March 2020, teachers could not be trained adequately for remote teaching and remote support for learners during the hard lockdown (Crompton *et al*., 2023). It is important to note that in March 2020, when the hard lockdown was announced, it was thought that the hard lockdown would only last for three weeks and would take up time only in the first school term, whereafter schools would open normally again in term two (Munir, 2021). After

the lockdown was extended and when schools eventually opened again, staff had to cope with the emotional drain of the pandemic, while supporting learners who had lost loved ones (Ronnie *et al*., 2022). Teachers had to also deal with constant amendments due to infection waves which in turn impacted lesson planning and assessments (Glietenberg *et al*., 2022). These struggles meant there were constant changes to the term planner and lessons. Coupled with these challenges was the lack of funds for some schools to purchase personal protective equipment (PPE), such as masks, gloves, sanitiser, and disinfectants. Other schools did not even have basic clean running water (Nchabeleng, 2020). The negative impact of the pandemic continued to impact schooling unabated.

School attendance was another aspect of education that was negatively impacted by the COVID-19 pandemic. Before the pandemic, South Africa had an average national school attendance rate of over 90% (Anakpo *et al*., 2024). The constant need to close schools due to the new waves of infections exacerbated the situation (Duby *et al*., 2022). Poor school attendance and constant school closures widened the gap in learner knowledge across the country between learners in schools that were open and those that were closed. Anakpo (2024) reports that school attendance dropped to 45% when schools were initially reopened for attendance on campus. Anakpo adds that school attendance was also lower for girls than boys. In impoverished communities, academic performance was lower at the end of 2020 for reasons such as schools not having the digital infrastructure to support remote learning, empty promises of teachers offering remote work or support, uncertainty of schools reopening, constant disruptions in schooling, financial pressure from the families and having to find jobs, and the frequency of drop-outs in the communities (Duby *et al*., 2022).

With the disruptions the COVID-19 pandemic had on the academic school year, there were losses in teaching and learning time (Engzell *et al*., 2021). The worst situation with missed content is having a gap in one's education and then having to move on due to curriculum timing requirements, but without having the groundwork foundation in place (Danovitch *et al*., 2021). The learner will not be able to relate the new content to past content, or be able to effectively build on to it. It is similar to having to multiply numbers before knowing what addition is. It is not impossible but it makes a lot more sense learning to add first (Bauld, 2021).

In the context of Saudi Arabia, schools were forced to close for 97 days at the beginning of the COVID-19 pandemic. The length of these closures is almost double that of many countries around the world (Mann *et al*., 2020). Most of the other countries encouraged learning to continue via television, online provision, and educational packages. The Saudi Arabian government made this decision based on the assumption that children were learning at home during the hard lockdown (Algaissi *et al*., 2020). The loss of time for learners who might have experienced challenges with accessing online learning must have been immense.

In Australia, perceptions and appreciation for the teaching profession was already positive in 2019, with 82% of surveyed participants from a population of 2444 people appreciating teachers and their role (Hefferman *et al*., 2021). Hefferman *et al*. add that after the pandemic, perceptions by the community about the teaching profession had increased positively. Parents realised how crucial and difficult teaching was, let alone teaching a large class. These perceptions show that not all consequences of the COVID-19 pandemic were negative, but that society also learned to appreciate what teachers and schools were doing (Hefferman *et al*., 2021).

Namkung *et al*. (2022) surveyed 582 primary school teachers in the USA about their remote work during the hard lockdown who were working in grade R to grade five. Results showed that an estimated 7.2 million to 11.6 million grade R to grade five learners did not receive any remote learning during the hard lockdown. Namkung *et al.* (2022) estimated that learners who did not have access to learning material within the first three months of the pandemic were already between 37% and 68% of where they should have been academically, all within the first three months.

It is reasonable to conclude that three months out of school is equivalent to one whole term out of school. This means that in South Africa, 7.2 million to 11.6 million children already missed out on a major portion of their academic year early on in the pandemic (Ardington *et al*., 2021). Namkung *et al. (2022)* estimate that the average loss of learning time from the pandemic was 6.8 months, but for lower-income households the average loss of learning time was 12.4 months during the pandemic. The reasons vary, but are related to the home environment and economic conditions (Namkung *et*

al., 2022). These numbers, however, do not account for the permanent losses in education. With the phased-in return approach of the different grades returning to school at different dates in the beginning, the last grades to return experienced the greatest loss of learning time (Ardington *et al*., 2021).

These gaps could lead to greater issues, as the curriculum later builds on what should have been done in the lower grades. An example following these numbers of learning losses from the pandemic would be if a child was in grade three during the COVID-19 pandemic, they would on average be performing 1.5 years behind by the time they were in grade ten (Namkung *et al*., 2022). Namkung *et al*. (2022) further argue that these lower academic estimates could be slightly remediated with efforts, but on average worldwide, it is expected to see learners performing 1.5 years behind pre-pandemic levels.

In South Africa, the estimates of learning losses differed based on whether the school was well-resourced or under-resourced. Studies measuring reading proficiency in South African under-resourced primary schools found that grade two to grade four learners (8-year-olds to 10-year-olds) lost between 60% and 80% of their learning year, compared to their pre-pandemic peers, due to rotational timetables and lockdown of schools (Reddy, 2022). Shepherd and Mohohlwane (2021) estimate that between March 2020 and June 2021, South African learners lost between 70% and a full year of their schooling due to rotational timetables. In the same vein, reporting on a study on an assessment and curriculum issued by the Western Cape Education Department (WCED) in 2022, Mahomed (2022) reports that learners at all grade levels experienced major losses academically due to the rotational learning timetables. For most South African learners, being at school had meant stability, nutrition, and safety, as previously mentioned. In-person school was the only place for them to receive meaningful learning opportunities (Reddy, 2022). In contrast, being at home under such difficult conditions meant that learners were in vulnerable conditions.

Turner (2022) wrote an article proposing the biggest issues discovered in education from the COVID-19 pandemic. The first was that students learned less when their teaching was done remotely. Most of the schools had little to no training or infrastructure. There was also very little time to get prepared, due to the sudden

announcement of the pandemic and its lockdown. The second issue related to those learners who were at high-poverty schools, as they were hit the hardest. Other schools or communities might have had bigger or extra classrooms or a budget to hire more staff, but high-poverty schools had to work with what they had, which was not necessarily enough to split classes, hire more staff, or even have support from parents at home with remote learning or homework packs.

Another issue that Turner (2022) noted was that worldwide there were different reactions and laws to dealing with the pandemic. Learners were more severely disadvantaged where their government had handled the COVID-19 pandemic badly. A further observation was there was no drastic change in the matric pass rates for 2020. Pass rates seemed fairly consistent. Although some provinces had dips of about 8% in 2020 compared to other years, not all provinces experienced this phenomenon (Tunrer, 2022).

The last issue that Turner (2022) raised was that schools could do something about repairing the losses, but in many cases they did not. There is already a lot of research on the improvement plans, but each school had their own particular situation, on which their improvement plans depended (Turner, 2022). Judging from the information presented in this section, many academic losses emanated from the COVID-19 pandemic globally and in South African schools.

2.2 Guidelines for teaching during the COVID-19 pandemic

Barshay, Bazzaz and Furfaro (2021) explored the methods that worked best for learners catching up due to the impact of the COVID-19 pandemic. They concluded that there should be a high dosage of tutoring in small class groups. This would increase one-on-one time for each learner and help them bridge the gap in their knowledge. After-school programmes that include extra curriculum support were also deemed vital. These could vary from workshops by teachers or organisations that help cater with programmes covering extra content. In South Africa, there are organisations such as the Scouts, Read to Rise, South African Education Project, Youth Potential South Africa, Save the Children South Africa, MTN Online School, Voortrekkers, Brownies and youth groups that all have Life Skills-based programmes that could also

help to cover certain topics. This does, however, require guidance or collaboration with organisations as well if teachers want those extra workshops to be effective (Barshay *et al*., 2021).

In the context of China, at the end of February 2020, the seriousness of the virus was setting in. China had already put social distancing in place as a first measure in slowing down the spread of the virus (Zanin *et al*., 2020). A little over two weeks after China had enforced social distancing, 120 other countries forced their schools to close for varying periods of time to limit large crowd gatherings and the spread of the virus. South Africa was one of those countries, initially enforcing a lockdown of three weeks (Azzi-Huck & Shmis, 2020).

Clark's (2020) article about how schools should prepare for the pandemic, he recommends that schools should firstly organise the buildings effectively and safely maximise the usage of the space. He further suggests that schools should develop and adapt learning so that it would flourish under those conditions and limitations set out by the pandemic. He adds that support and training should be available for teachers, as they are expected to work under very difficult circumstances.

The UNICEF (2023) released a set of guidelines on how schools worldwide could catch up on learning losses from the COVID-19 pandemic using small classes. They introduced the Reach, Assess, Prioritise, Increase, Develop approach, also known as the "RAPID" response, where each letter of the word gave a method that schools could use in their efforts towards curriculum recovery. "Reach" meant that schools should reach every child and keep them in school. This meant that no child should be left behind, but rather they should be encouraged to be at school and to continue with their education. Children were to be encouraged not to be unnecessarily absent from school. Dee (2024) agrees with UNICEF as he found that there was an increase of 91% in chronic absenteeism between 2021 and 2022 in the United Sates of America alone.

"Assess" meant that learners' levels should be assessed regularly (UNICEF, 2023). Assessing learning levels regularly provide constant information about how the learning is going and could be used to feedback into adapting instruction accordingly.

Constant or continuous assessment, with the aim of informing future lesson planning means lessons were directed at the needs of learners, and helped to fill in any gaps in learning losses caused by the pandemic (National Academy of Education, 2021).

“Prioritise” was a call for teachers to prioritise teaching the fundamentals. Instead of racing through all the content in the face of time constraints, they should rather focus on the essentials that could later be unpacked into smaller parts of each curriculum (UNICEF, 2023). Zhao (2021) argues that focus should be given to the most important aspects of the curriculum first (Zhao, 2021). “Increase” was a call for teachers to increase the efficiency of instruction (UNICEF, 2023), in terms of schools not wasting time. Petrila *et al. (*2022) suggest that any time in class should be used effectively and the manner in which the instruction should be delivered should be done with the best learning outcome.

“Develop” urged teachers and management to develop the psychosocial well-being and health of their learners and colleagues. During the time of returning to school after the hard lockdown, there was a lot of uncertainty, and the mental health and well-being of learners and teachers was important. UNICEF advised that countries should have systems in place to support and help those in need of mental health care. Moreover, UNICEF concluded that schools globally should also adopt the RAPID approach.

Von Hippel (2021) conducted research which found that reducing class sizes had an impact on sickness-related absenteeism in schools. The research data was collected before the COVID-19 pandemic and looked mainly at influenza-related absenteeism. Although influenza is an entirely different sickness, the results still showed a slightly reduced rate of absenteeism from classes that were smaller over a period of three years. Von Hippel notes that the spread of influenza was similar to the COVID-19 virus. The necessity for small classes goes is thus relevant to another COVID-19 outbreak.

Most recently, the District Management Group (DMG) (2024) of South Africa released an article on five effective strategies schools could use to catch up on lost learning time and help bridge the gap in knowledge for learners who were academically still behind their age cohort. The first strategy is for teachers to identify missed learning

standards. DMG (2024) found that knowing which content has been missed and adapting lesson plans are vital in formulating an effective recovery plan.

The second strategy is to change the annual teaching timetable for the first few months of the academic year to include more teaching time for the key areas identified in the baseline assessments as lost learning (DMG, 2024). Teaching plans need to fill in the gaps in learners' knowledge before moving on to new content. Even prior to the COVID-19 pandemic, slightly altered annual teaching plans had made it possible for missed content to be retaught before moving on to new content (Naidoo, 2019).

The third strategy is for teachers to create a six-week catch-up course on those lost learning areas (DMG, 2024). The catch-up course can be offered after hours or during class time. The catch-up course can also be centered only on specific learners and not all the learners, depending on whether the whole class needs the catch-up course lessons or not. This is comparable to individualised educational plans (IEPs) used in most schools with sufficient resources. Teachers could create a plan that focused on a core group of learners, or individual learners, who only needed help in a certain area of the content, thus not teaching to the whole class if not required (Kosmann, 2022).

The fourth strategy is to build daily extra help and instruction into the timetables specifically for learners who needed it (DMG, 2024). This strategy, effective as it is expected to be, needs the teachers and learners to possibly put in extra hours. This follows what Kosmann (2022) also suggested, that teachers and learners would need to possibly work after hours if the lessons were only for a core group of learners and not the whole class. A possible suggestion to avoid after-hours classes would be to give those learners who need support an extra question or two informally during class time to help them think more deeply, and hopefully recover (DMG, 2024).

The fifth strategy is to include any extra staff available to help take extra classes or to serve as teaching assistants (DMG, 2024). Extra staff will be able to take some of the learners to help create smaller classes.

2.3 Contribution of quintiles to large class sizes and poor quality of teaching and learning

It is vital to understand that South Africa has school communities with vastly different economic conditions (Meiring *et al*., 2018) The differences in these communities have led to diverse levels in resource availability and access to financial resources. This condition aggravated their individual situation when the COVID-19 pandemic broke out (Van Lancker & Parolin, 2020). Van Lancker and Parolin (2020) state further that these school communities are often associated with many impoverished families with a large number of children needing to go to school. Hence, it is very common for schools in these communities to have large classes well above the average South-African class sizes (Asodike & Onyeike, 2015).

These communities tend to be characterised low income and the inability to prioritise paying school fees (Mestry, 2020). Mestry indicates how schools in these communities do not receive an extra income from fees, which renders them heavily dependent on the DBE to help cover their financial obligations. The DBE has grouped these schools according to the percentage of support they need financially under groups called quintiles, as mentioned above (Amnesty International, 2020). Overall, there are five quintile levels.

Quintile level one schools face several challenges. Although they do not have to worry about funding teacher salaries, as the DBE pays them directly, these schools still experience other challenges which negatively impact on teaching and learning or at least hinder them from being up to date with trends in education (Mestry & Africa, 2020). An example of this could be a remote rural quintile level one school which is far from digital infrastructure. This could impact lesson planning, lesson differentiation and the school's ability to keep abreast of educational trends, such as coding and robotics (Tutor Doctor, 2017). Some urban quintile level one schools also have a constant struggle with crime (Maistry & Africa, 2020). Maistry and Africa elaborate that generally, the communities surrounding these schools are poverty stricken, and crime rates are high. In these cases, the schools are prime targets of theft and vandalism,

as they have no security at night or during school holidays to deter break-ins (Barnes, 2021).

Barnes (2021) explains how quintile level one schools experience other challenges that are prevalent in the poverty cycle. These challenges include crime, poor health, lack of tertiary education opportunities, basic teaching resources, and poor hygiene in the classrooms impacted by litter and the rooms being dirty. Barnes (2021) also mentions the lack of water, electricity, furniture, sanitation, information communications technologies (ICTs) and high learner-educator ratio (LER) as being other challenging issues in these schools. Barnes continues to explain how these challenges impact the learners' learning experience and how the lack of adequate seating, which is common in some quintile level one schools, leads to backache, low concentration levels and writing difficulties. The challenges experienced by these communities make it difficult for teachers to work efficiently (Van Der Berg *et al*., 2020).

Basaleh (2023) claims that in quintile level one school communities, parents are often unable to afford extra resources needed for education, such as textbooks and stationery. Parents are reliant on the DBE and the school to not only to provide the needed resources for learning, however creatively, but also to provide for the basic needs of their children, such as meals (Bryant *et al*., 2023).

In many of the quintile level one schools, it is also evident that there are less qualified teachers available (Barnes, 2021). There is also an inadequate number of staff, compared with the number of learners enrolled at the school impacting, the LER (Agbor, 2012). Barnes (2021*)* adds that it is typical for quintile-level one schools to have large classes due to these factors. With these challenges already in place impacting education at the quintile level one schools, when the COVID-19 pandemic hit South Africa, these schools, in particular, were very negatively impacted by the COVID-19 pandemic, thus further adding to their already existing challenges (IOL, 2021).

With learners feeling disconnected from teachers in large-class schools, the level and relevance of teaching and learning are reduced, and the enjoyment of learning or teaching is lost (Barnikis, 2015). The COVID-19 pandemic introduced small classes to schools that normally had large, underperforming classes due to the need for social

distancing. It is therefore vital to see how the teachers perceived the effectiveness of teaching smaller classes, compared to teaching large classes.

2.4 Impact of large class sizes on the quality of teaching and learning

Prevailing literature shows that the LER has a direct impact on the effectiveness of teaching and learning. It impacts on the resources available for teachers to share with learners, the teachers' workload, their stress levels, and the quality of teaching and learning (Ayeni & Molowi, 2016). West and Meier (2020) found that the shortage of teachers and the need for more infrastructure have created an average LER of 33:1 in South Africa, which is considered a large class size (Kim, 2007; Burch, 2019; Antoniou, 2024; Obiakor & Oguejioffor, 2020). In some South African schools, the LER is 50:1 and higher. Participants in the Achilles Heel research on South Africa's schooling system made claims that classes with a LER of 25:1 and more are inappropriate and unacceptable (West & Meier, 2020). West and Meier (2020*)* indicate that a high LER makes the classroom either uncontrollable for the teacher or leads to reduced one-on-one time between learners and their teacher. The more learners there are in the classroom, the more thinly the teacher's attention is spread (Vandenberg, 2012). In large classes, learners can get lost and sometimes not even have opportunities to voice their struggles or confusion (Wang & Calvano, 2022). These experiences can lead to many challenges for learners and teachers (West & Meier, 2020). It is evident that class sizes have always varied across South Africa prior to the COVID-19 pandemic, and that large LER has negative side effects for teachers and learners.

Watson et al. (2017) conducted research in Australia on teachers' perceptions of class sizes, using a sample of 1 119 teachers. Participants mentioned that large class sizes contributed to ineffective teaching and learning. Another study on teachers' perceptions on class size conducted by Almulla (2015) in Saudi Arabia, using a sample of 67 teacher participants, indicated that their ideal class size was between 15 and 20 learners to one teacher. They expressed the view that larger classes than that meant that they lost teaching time to classroom management of learner behavior.

From the perspective of learners, Singal and Swann (2011) report that learners in large classes feel that the setup is outdated and impersonal, as classes are too large and there is not enough time for one-on-one interaction between the teacher and learners. Barnikis (2015) found further that many learners feel that schools or school systems with large classes do not cater to their current needs to enter the ever-changing world. The modern world has more information for learners to take in before leaving school, and a small class gives them the opportunities needed for this to occur, with more one-on-one attention possible.

Large classes bring a very real threat to the quality of teaching and learning and are a challenge to the teacher concerned (Fortes & Tchantchane, 2010). In a large class, it can be difficult to differentiate lessons for the diversity of learners. There can be a difficulty in being flexible with lesson activities. It can also be a challenge to set and enforce an appropriate discipline and management system with regards to learner behavior in the classroom, and a struggle to engage with learners (Wadesango, 2021).

In a study conducted by Graham (2023) to investigate the impact of class sizes on mathematics results, qualitative data showed a correlation between large or overcrowded classrooms and poor mathematics results among grade nine learners (Graham, 2023). Graham further discovered a significant relationship between class size and academic performance, namely that it was increasingly negative as classes grew (the larger the class, the worse the academic performance). They also found that teachers who simply thought the class was too big also negatively impacted their classes' academic performance, showing how an educator's attitude or perception towards a class is also vital to its success (Graham, 2023). Further, the learners' attitude and perception of the class size also impacted their results as did the teachers' perceptions of the class sizes. These results echo West and Meiers (2020), who discovered a correlation between large classes and poor academic performance in South African schools.

Another impact of large class sizes is incivility and the disruptions that poor learner behaviour brings about. In contrast, a small class can bring about more desirable behaviour and less disruption (Letseka, 2022). According to Letseka, a large class tends to lean towards learners blending in it anonymously, which minimises classroom

interactions between teacher and learners. This means fewer questions being asked and possibly less learning happening, or if a learner is behind or struggling, perhaps after the COVID-19 pandemic disruptions, a larger class is not a good option for learners to catch up on lost learning time (Kim, 2007). Letseka (2022) adds that some learners found large classes stressful, as the number of learners were overwhelming for them. The negatives of a large class size highlight the advantages of small class size and why small classes should be utilised.

Spaull (2013) cautions that in South Africa, the quality of teaching and learning was already poor in general prior to the COVID-19 pandemic due to large class sizes, as found in the international assessment conducted by the Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ) in 2012. According to Spaull (2013), the Trends in International Mathematics & Science Study (TIMSS) found that teacher quality was a serious factor in South Africa, stating that some grade six learners scored higher than their mathematics teachers when they were assessed on the same content level. This poor teacher quality, coupled with the high LER in South Africa, was already a state of disaster. Furthermore, Spaull (2013) maintains that before the outbreak of the COVID-19 pandemic, the quality of teaching and learning in South Africa was on average far lower than other developing African countries, such as Tanzania, Kenya and Swaziland. Based on these international assessments, one can see that the South African public education system was already at a disadvantage prior to the COVID-19 pandemic. This disadvantage would only aggravate the impact of the COVID-19 pandemic in South Africa, compared with other educational systems around the world.

Class sizes in South Africa are well known to be relatively large, compared with other developing countries (Gustafsson & Mabogoane, 2012). The South African education system is affected by a shortage of teachers and funding, thus adversely affecting availability of classrooms and schools (West & Meier, 2020).

A report by the Amnesty International (2020) showed a relationship between schools with large classes and specific communities in South Africa. The report revealed how, generally, rural schools outside of major cities had large classes of learners and a high

LER. There were also certain communities and suburbs within major cities that had schools with large classes.

2.5 Global perceptions of teaching small class sizes

If not defined correctly, the term “class size” can be problematic as, depending on the context, it can mean something different, such as the physical room dimensions or the number of learners in a grade. Shamin and Coleman (2018*)* state that class size in some areas refers to the physical dimensions of the classroom. In the context of this study, class size refers to the number of learners in a class that one teacher has to teach, a definition provided by Nihaadh (2023). Class size is determined by the learner-to-educator ratio (LER). The higher the LER, the bigger the class size in terms of the number of learners per class and vice versa. Venketsamy (2023) defines the LER as the number of learners grouped together in a particular class and the number of teachers in that particular class. In Japan, the class size is impacted by the classroom size, and this in turn impacts the learner to teacher ratio as it is limited by physical spaces in the class; however, it is still defined as the number of educators to learners in the room (Hojo, 2021). Having a larger room with more learners and teachers present does reduce the LER but it also creates more distractions, so ideally it would be the lowest LER with one teacher present giving you fewer learners in the classroom, according to Solheim and Opheim (2019).

The concept of large and small classes varies from country to country and school to school. One of the most common determinants of class size is the socio-economic status of the community surrounding the school, as shown in the discussion of the quintile system above. In South Africa, schools in quintiles 1 and 2 generally have overcrowded classrooms, compared to their quintile 3 and 4 counterparts that have smaller class sizes. Shamim and Coleman (2018) mention that there is no consensus on what is considered a large or small class size, but Antoniou (2024) argues that there is an optimum class size per age group. Antoniou (2024), Vandenberg (2012), and Kim (2007) all agree that the optimum class size would be 15 learners per teacher. Other research shows that the optimum number of learners in a class greatly depends on the age group and that class sizes should vary from 12 to 30 learners per class, ranging from ages at preschool level and up to university level (Burch, 2019). Obiakor

and Oguejioffor (2020) found that large classes of 40 to 45 learners per teacher resulted in poor academic results. The consensus of the optimum class size for primary school classes is 15 learners to a teacher or an LER of 15:1 (Kim, 2007). The American Academy of Pediatrics (2019) released their preferences for the optimal LER in different age groups (American Academy of Pediatrics, 2019). They claimed that for primary school children, there should be one teacher for every 10 children between the ages of six and eight. For primary school children between the ages of nine and twelve, there should be one teacher for every twelve children. The Academy further recommended that for children between the ages of six to eight years, there should not be more than 20 children in a class, and no more than 25 children per class for learners between the ages of nine and twelve years.

Table 1 below summarizes different countries' policies regarding maximum class sizes in primary schools (National Association of Schoolmasters Union of Women Teachers (NASUWT), 2023).

Table 1: Countries with the highest limit on class size

Country	Class Size Maxima
Japan	40
Hong Kong	36
South Korea	35
South Africa (*average class size)	34
Singapore	30
British Columbia	30
New South Wales	30
Poland	25
Canada (Ontario)	23
Canada (Alberta)	17-23 (depending on age group)

*South Africa does not have a policy placing a limit on class size. The DBE simply suggests a class size limit, but this does not mean classes cannot go larger than that. The number above for South Africa is the average class size, although Spaull

(2016) reports classes in excess of 60 learners to one teacher in some schools in South Africa. Looking at a few countries from around the world in Table 1, one can see that the average class size for South Africa tends to fall in the large category.

Below we can compare the 10 countries with the smallest classes or the lowest LER to the data in Table 1. One can see that all of them have 10 learners or fewer per teacher in a class, as shown in Table 2 below (*World Atlas*, 2019).

Table 2: Countries with the lowest limit on class size

Country	Class Size Maxima
Poland	10
Iceland	10
Sweden	10
Andorra	9
Cuba	9
Luxembourg	9
Kuwait	9
Liechtenstein	8
Bermuda	7
San Marino	6

In contrast to the small class sizes presented in Tables 1 and 2, some countries have large classes per classroom. For example, Shamin and Coleman (2018) mention that in Malaysia, large classes have been reported to consist of up to 60 learners in a primary school class, and as many as 5 000 learners at an open-access university class in Thailand.

The next section presents literature on the impact of small classes on the quality of teaching and learning.

2.6 Influence of small classes on the quality of teaching and learning

Several top-ranking countries academically have utilised small classes as their preferred model for high academic achievement (Naude & Meier, 2019). Kohler (2022) asserts that small classes should be used as a nationwide school model to help improve the education system as a whole.

Accelerated learning in small classes supports what the DMG (2024) mentioned in their fourth strategy on how teachers should look ahead and add mini-lessons. The mini-lessons could be on content needing to be caught up, based on the baseline assessment results done prior. They could take place in small classes or small groups to help recover lost learning time. The DBE (2020b) also described this as an effective method to effect curriculum recovery in their guideline sent to schools. The DBE also advised that small classes providing mini-lessons could help recover lost learning time. The small classes do not need to be permanent. Instead, the teacher can identify learners who need the support and then create once-off after-school hours small classes to help learners catch up, thus taking advantage of the benefits of small classes.

Small classes often achieve better quality results, which can help with learners who struggle academically (Wang & Calvano, 2022). The reason for this is that unlike their counterparts in overcrowded classrooms, learners in small classes can receive one-on-one assistance and support from the teacher when they need it. They can be extended by covering more content than what is required in the curriculum if the learners are ahead in their work, and for those learners with gaps in their knowledge, they are able to get prompt assistance (Finn, 2019). Finn further mentions that in a small class, teachers are able to teach and not constantly be burdened with disciplinary issues. In small classes, learners are less likely to influence each other to be poorly disciplined. If poor discipline occurs, the teacher is able to identify it and correct it within a shorter space of time than in a large class with more learners distracting one another (Mosteller, 1995).

In a small class, learners have more chances to take part in the lesson (Pedder, 2006). As a minority of learners ask and answer questions, this equates to each learner

having more opportunities to be engaged in the lesson, thus extending their own levels of thinking (Din, 1998). There is a strong emphasis on feedback with assessments and growth in a small class environment (Letseka, 2022). As the teacher's time is not divided among many learners, they have more time to work on content, work ahead, and also have time available for feedback on learners' work (Wang & Calvano, 2022). This is an ideal classroom situation to have when catching-up on content is needed, or when there is lost learning time, such as during the COVID-19 pandemic (Laitsch *et al*., 2021).

In addition, small classes give enhanced learning opportunities, as teachers have more time to go beyond the lesson plan (Finn, 2003). This enhancement could include extension activities, remedial lessons, applying multiple media or methods to explain the same lesson, or even just games to make learning fun (Din, 1998). In a large class, it is difficult for a learner to have individual personal time with the teacher (Kohler, 2022). Small classes provide an opportunity for teachers to guide learners through content individually, which meets the learners where they are, instead of where a group or the whole class is (Finn, 2019). The fewer the learners in a classroom, the more the teacher is available to give individual attention to each one, which can lead to an increase in academic success (Nihaadh, 2023).

Barnett *et al*. (2004) assert that small classes enable more time for learners to share ideas and learn critically about their input. Learners have more opportunities to see if the idea they share in class is viable or not. This gives them an opportunity to learn critically and adapt their own suggestions of ideas (Biddle & Berliner, 2002).

Another benefit of a small class is how the learners gain an enhanced sense of community, as they get to know one another better and can be more supportive of one another (Finn, 2019). They feel a sense of belonging and at home in their small class, as opposed to being surrounded by many other learners but not connected to a single one of them (Harfitt, 2012).

Biddle and Berliner (2002) outline the benefits of small classes. They include individualised learning and learning support. In smaller schools, there is often space available to create individualised learning programmes for each learner, helping them

achieve and be the best they can be. Like other theorists, Biddle and Berliner emphasize that small classes achieve better overall academic results. Learners still needing support could catch up and the overall achievement of all learners increases (Kohler, 2022). Biddle and Berliner (2002) add the benefit of how in a small class, learning is enhanced, quicker, and more efficient with the available class time. There is only so much time in the day, and this learning time needs to be used efficiently to help learners catch up, continue, and not fall behind.

In addition, Biddle and Berliner (2002*)* explain that in a small class, teachers can be more spontaneous than in large classes. Small classes can be flexible, teachers can adjust the learning programme on the spot to be more fun, more real, and more open, and thus more memorable for learners. In these classes, learners feel as if they are in a family, which leads to their looking out for one another, helping one another and creating a much happier environment (Kohler, 2022). Similarly, these classes make way for more opportunities for learners to participate in the lesson (Biddle & Berliner, 2002). There are fewer learners competing to ask questions, or disrupting the lesson. This leads to more opportunities for each learner to ask their questions. In contrast, larger classes tend to leave some learners not asking their questions due to time constraints or even feeling embarrassed by other learners in the class. Biddle and Berliner (2002*)* add that in a small class, the focus can be on learning and most of the time it is not wasted on classroom management or behavioral disruptions, as noted by Finn (2019) and mentioned above.

In the post-COVID-19 world, teachers need to be efficient with their time and get their learners back on track. In a small class, there is often more feedback from teachers, which leads to learners knowing where they went wrong and how to improve. Feedback, especially individualised feedback, takes time, and this time is more available in a small class (Biddle & Berliner, 2002). Biddle and Berliner further contend that in a small class, one-on-one contact time between the teacher and learner is encouraged and supported. The learners all learn from each other as they have opportunities in a small class to hear from their peers.

Snow (2014) outlines predominant themes in her research on class sizes, showing that small classes help teachers to organise the physical layout of the classroom,

leading to an environment in which it is easier to build trusting relationships with the learners, and which enables the teacher to manage learner behavior more easily. In the same study, it was found that teachers felt more effective in small classes, and that there were fewer challenges in the classroom. However, no noticeable improvements in the test results of the learners were shown. In a different study, when teachers changed from large to small classes, many did not have to change their pedagogy, and yet the improvements were positive (Harfitt, 2012). Singal & Swann (2011), on the other hand, indicate that learners feel that smaller classes allow them to connect with the teacher, whereas large classes leave them feeling misunderstood by their teachers. Small classes also lead to educational effectiveness and offer better health and safety benefits, with more teachers being able to work as effective guardians in guiding and protecting learners (Barnett *et al*., 2004).

In a small class where all ideas can be heard, there is time to consider every learners' solution and learn from one another (Laitsch., 2021). Ideas are shared: everyone is heard, and every idea can be considered and discussed. It is also easier to identify a problem or where there is a gap in a learner's knowledge, leading to fewer issues in the learners' schooling. After the COVID-19 pandemic and all the learning time that was lost, many issues and gaps in learners' knowledge were identified and needed to be closed (Biddle & Berliner, 2002). It is for this reason that this study was conducted, to ascertain whether small classes and rotational timetables were effective as curriculum recovery methods during the COVID-19 pandemic.

2.7 Implementation of rotational timetabling during the Coronavirus-19 lockdown

Rotational timetabling was adopted in South African schools as a strategy to observe the DBE SOP alluded to earlier. Besides limiting the health risks to the teachers and learners from being infected with the COVID-19, rotational timetabling and its accompanying smaller classes were also employed to help the teachers and learners recover the teaching and learning time lost during the COVID-19 lockdown.

Rotational timetables in schools were also implemented in the Czech Republic as a non-pharmacological intervention to the COVID-19 pandemic (Brom *et al*., 2023). The Czech Republic did weekly rotations of classes to help prevent the spread of COVID-

19. Singh *et al.* (2021*)* report that other countries, such as New Zealand and the UK, also used rotational timetables to limit the spread of the COVID-19 virus together with a blended approach of rotational timetables and remote online work.

Various models of rotational timetabling are used internationally. In the context of South African schools during the COVID-19, rotational timetabling was implemented differently at each school, depending on the particular status of each school as defined by availability of facilities, how many smaller classes had to be accommodated, and the number of staff. In general, large classes were split into two or more smaller classes. For example, if a school had three classes per grade prior to the COVID-19 outbreak, they might need to split each of those classes up making a total of six smaller classes. The actual number of splits had a lot to do with each school's availabilty of classrooms, how large or small each room was and how many staff were available. School management teams had to keep in mind the DBE SOP requirements of spacing between learners. If the DBE SOP required a 1,5m space between learners, they would have to space out every chair at least 1,5m away from one another. The splitting of classes depended on this spacing and how many learners could fit into the classroom with that spacing being adhered to. If a classroom could accommodate 15 learners with 1,5m spacing, then classes would have to split into smaller classes of a maximum of15 each. For some schools it meant having some classes in the first half of the day and other classes on the second half of the day. This is also know as platooning .For other schools it meant having some classes on Mondays, Wednesdays and every alternate Friday and then the other classes would go to school on Tuesdays, Thursdays and every alternate Friday (DBE, 2020b). On the days when a class did not meet at school, the learners stayed at home. Rotational timetabling entailed splitting classes and alternating when each group of learners would attend classes. The particular arrangments were specific to each school (Hoadley, 2023). School management would need to make a decision on how the rotational timetabling would work at their school.

The DBE SOP document recommended another model that involved a phased-in, staggered approach to learners returning to school. This model allowed grades seven and twelve learners to return to school first, as these were terminal levels at primary and high schools respectively. A few weeks later, the next groups to return to school

were grade six learners at primary schools and grade eleven learners at high schools. The last groups of learners to return to school were those under grade six in primary schools and under eleven in high schools (Hoadley, 2023). This tiered approach gave priority to the grades that were at the higher levels of primary and high schools. It also gave the learners and staff time to adjust and get everyone used to the new way of schooling, with all the rules in place set out by the DBE SOP. In the end, some learners returned to school after the hard lockdown but not all of them were back at the same time (Shepherd & Mohohlwane, 2021).

It is therefore evident that although rotational timetables might have helped to reduce overcrowding, which would have led to an increase in COVID-19 infections among teachers and learners, they had their limitations. However, what still needs to be ascertained is how they contributed to effective curriculum recovery in schools that generally had large classes before the outbreak of the COVID-19 pandemic. The next chapter introduces the research methodology that was used to collect and analyse the data obtained.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter Two covered the literature review that is pertinent to this study. The current chapter covers the research methodology, which includes the research paradigm, research approach, research design, site selection, participant selection, data collection, data analysis, trustworthiness, the researcher's position, and ethical considerations.

3.2 Research paradigm

An Interpretive paradigm was employed in this research. The interpretive paradigm tends to lean towards qualitative research and it is best suited to find participants' subjective perceptions and experiences (Alharahsheh & Pius, 2020).

This paradigm helped the researcher to obtain participants' perspectives of their subjective and lived experiences regarding the implementation of small class sizes and rotational timetables for effective curriculum recovery during the COVID-19 pandemic.

3.3 Research approach

A qualitative approach was used in this study, as it allows the researcher to look into participants' feelings and perceptions. A quantitative approach could not be used in this study as the data collected was based on perceptions and feelings rather than numbers and quantities (Busetto *et al.,* 2020). A qualitative research method is best when one is trying to seek information that is based on attitudes, opinions, beliefs, views, and preferences (Hammarberg *et al.,* 2016). Hammarberg *et al*. (2016) contend that qualitative research values lived experiences and is quite sensitive to the biases of both the participants and researcher. This then became

the perfect tool to collect data on participants' experiences of the phenomenon under study. Using a qualitative approach provided the researcher with abundant data about real-life people, the situation and how they perceived it (De Vaus, 2014). As mentioned earlier, a qualitative approach and the interpretive paradigm work well together to help the researcher understand participants' experiences and perceptions during a particular social concept, in this case, their experiences of how the implentation of small classes and rotational timetabling helped with curriculum recovery during the COVID-19 pandemic.

The qualitative approach allowed the participants to answer questions and give feedback without constraints. With open questions and their own time to answer, they could think freely about their answers and experiences before responding. They also had time to bounce ideas between questions and change answers to what they were happy to give out. These are some of the advantages of qualitative research (Merriam & Tisdell, 2019). The qualitative approach was also chosen because it is the best approach to use when a topic has not already been extensively researched (Creswell, 2009). Being a recent phenomenon, research on the COVID-19 pandemic is not yet exhaustive.

Trochim (2007) explains that a qualitative approach is best used when a topic, such as the one under study, is hard to quantify and expressed in numerical values. This study required data surrounding feelings, attitudes and perceptions, which cannot be translated into simple numbers (Trochim, 2007).

3.4 Research design

The research design was a case study. According to Rashid *et al.* (2019), a case study focuses on the particularity of a single case and seeks to understand its complexity. They add that a case study also provides a holistic view of the context of the phenomenon being studied. In this study, the case study enabled the researcher to explore the phenomenon of rotational timetables and smaller class sizes in the context of the COVID-19 pandemic and the participants' individual perceptions.

The benefit of using a case study design was its ability to help understand a situation that participants experienced. Murphy (2014) outlines the benefits of a case study design as follows: a case study enables the researcher to discover data that is occuring and see how it can be researched or discovered going forward. In this study, the researcher sought to discover how the small classes and rotational timetables impacted the teachers perceptions of curriculum recovery and how it could be used again in future crisis situations in education where a small class or rotational timetabling would be needed. Furthermore, Murphy (2014*)* mentions that a case study also has the ability to record and capture lived reality; that in an educational context, background information can often be complex to research; and that a case study captures this complexity the best. Complexity could be found in the background of the school, learners and parents. It could also be the economic climate of the area and school, the grades being studied, and experiences and qualifications of teachers. All of these factors bring different results, and a case study can make space for all of those complexities to be included and explored.

Case studies are also extremely valuable as they offer an opportunity to learn from practice, thus influencing theory (Leymun *et al.,* 2017). Following the previous point of being able to learn from practice, there are vast complexities present in the data, as it includes lived events and experiences. According to Ross (2023), a case study is used when complex events need to be explored in depth and retrospectively. Being able to look back at the case study as a whole and seeing how effective the small class and rotational timetable implentation were through the different lenses of each participant, this study can reveal how these factors can potentially help in future crisis situations.

3.5 Site selection

Research was conducted in the town of Worcester in the Western Cape Province of South Africa. Worcester has several government-run primary schools. The three schools chosen were diverse in terms of race and culture. This diversity enriched the data collected due to the diverse perspectives of the teachers and the diversity in the learners that they taught. In Worcester there are nine primary schools in the

quintile level one group. Of those nine, five were in close proximity to the researcher. The three schools selected were the closest to the researcher that met the criteria of having large classes of more than 30 learners per class per teacher, and they were also primary schools in the quintile one category. The concept of quintiles was presented above in the literature review.

These schools ranged from grade R to grade six. As the schools had to be in close proximity to the researcher, convenience sampling was used to choose the schools in this study. Convenience sampling is used to collect data from an easily accessible group of people (Simkus, 2023).

The researcher contacted the three closest schools to meet with the principals and discussed the possibility of conducting the research at their schools. The three principals were supportive of being involved in the research. The researcher then applied for permission to conduct the research from the local district WCED office. Once permission was granted, the researcher met again with the principals for their signatures on the consent forms (See Appendix B). These schools all had to adapt and institute small classes and rotational timetables during the initial stages of the COVID-19 pandemic due to the DBE SOP requirements.

The three schools were given pseudonyms and are later referred to as School A, School B and School C.

3.6 Participant selection

One of the criteria for participation in this study was that the teachers should have taught large classes for a minimum of at least two years before the outbreak of the COVID-19 pandemic in South Africa. The other criterion was that participants should never have taught using rotational timetables before the advent of the COVID-19 pandemic. The researcher based these criteria on the fact that these teachers would have experienced the effect of the changes created by small class sizes and rotational timetables. They would thus be in a position to provide valuable data on the phenomenon under study.

Purposive sampling was used in the selection of the participants as the participants had to meet the above criteria to be part of the study. Purposive sampling is when selection is made based on certain criteria being met for the purpose of identification of information-rich cases related to the phenomenon of interest. Palinkas, Horwitz and Hoagwood (2015) aver that purposive sampling looks for specific characteristics belonging to participants. These characteristics being primary school teachers who had taught for a minimum of two years before the COVID-19 outbreak and who had never taught using rotational timetables.

After the researcher had met with the principal of each school, a link to a Google Forms survey was sent to the school for circulation via the principal as an invitation to take part in the study. The Google Forms survey is discussed in the following section, and an example of the questionnaire can be seen in Appendix A. The questionnaire asked the teachers for information about their qualifications and experience, which assisted the researcher to identify the participants who would meet the appropriate criteria needed for the study.

An invitation for participant selection was sent to the three primary schools discussed above, to all teachers from grade R to grade six. There are four grades in Foundation Phase (grades R, one, two and three), and three grades in the Intermediate Phase (grades four to six). In all, teachers across seven grades from three different schools were invited to take part in the study.

Unfortunately, not all of the teachers were available to take part in the study. Their reasons varied from time constraints, not being a viable candidate in view of not having worked for a minimum of two years before the outbreak of the pandemic, or they simply did not feel comfortable taking part in this research. Of the 21 teachers who taught these grades, 13 volunteered to take part in this study. They were spread across the three schools and the two phase levels.

3.7 Data collection

A Google Forms questionnaire (Appendix A) was designed and used as an online data-collection instrument. Ponto (2015) explains that Google Forms is an online

cloud-based data management tool used for designing online questionnaires. Using the Google Forms format, the participants would be able to follow a link formulated by Google and shared with them via their principal to an internet-based site which would allow the participants to complete the questions online.

As noted above, the researcher had first met with the principals of each school to introduce himself, what the research topic was about, and how each school could help. From these meetings, the researcher obtained signed permission from the principals allowing him to conduct the study at their schools (Appendix B). The researcher agreed with the principals on whether to send the Google forms via WhatsApp to the principals' personal cell-phone numbers or to the official school WhatsApp numbers. The link to the Google Form was first sent to the principal of each school who then forwarded it to the cell-phone numbers of the teachers who were willing to volunteer to participate in this study.

The Google Forms questionnaire could have also have been printed as hard copies if any participants were unable to access the link digitally. Fortunately, all of them were able to complete it online using their smartphones, laptops, tablets, iPads or desktop computers. The researcher gave the participants two weeks complete the questionnaire before asking the principals of the schools to remind their staff to submit their responses to the questionnaires. After two weeks, responses from eight responses participants were received. This low response rate prompted the researcher to send a reminder to the principals to request their staff to submit the outstanding questionnaire responses. After the reminder went out, the remaining participants completed the questionnaire and all the data was received.

The Google Forms questionnaire was designed to obtain permission and ask participants for their feedback during the time that was convenient to them. It was also an efficient tool to summarise data and show totals for each given answer, as it could convert the collected data into an Excel spreadsheet and group similarly-selected answers (Melo, 2018). Below is a link to the questionnaire that was sent out to the Foundation and Intermediate Phase teachers (see also Appendix A):
https://forms.gle/24wMyZBqM2LhrpWH9

Collection of data opened up once the link was shared with the participants. The length of time for data collection fell within the time frame that the WCED allowed the research to be conducted, which was from 1 August 2023 to 30 September 2023. The researcher outlined the reason for the research at the beginning of the questionnaire to help the participants understand why this research was being conducted and for them to be familiar with the research problem.

Follow-up interviews were proposed to the participants. The purpose of the interviews was to elaborate on the questions asked in the Google Forms questionnaire. However, no participants volunteered to be interviewed.

After the data was collected, it was saved as an Excel document in a local drive that was accessible only to the researcher. No data was saved on Google Forms or any online source or cloud system. It was explained to participants that the data would be destroyed three years after the study was completed. Furthermore, participants were informed that data would only be used for this study and for the research papers emanating from this study.

3.8 Data analysis

From the Google Forms questionnaires, the researcher was able to see all the answers per question and to view the data in the Excel spreadsheet. This spreadsheet helped to reveal patterns in the data and themes. Essentially, the Excel spreadsheet showed how many participants expressed similar perceptions, how many expressed opposing perceptions, and how many took part in the study. It also grouped the data together from the same questions where longer answers were given.

After data was collected via Google Forms, any themes or patterns that were found by the researcher were categorised together. For example, similar answers or perceptions were grouped and tallied. The questionnaires were printed out and the researcher then read through each participant's form and colour-coded words that represented similar ideas. The same colours were used across all participants' forms to represent the same themes. At the same time, on a separate page, the

researcher kept a log of all the colours used and the themes associated with each colour.

He gave each theme an abbreviation as a code to represent what that theme was. For example, the theme of discipline had the code (D). Everytime a participant mentioned discipline or a related word or phrase, it was highlighted in red and the code (D) was allocated to it. Using the codes allowed emergent sub-themes to be identified. This colour-coding system helped later when discussing and analysing the data presented in Chapter Four. The colour- and letter-coding helped keep track of answers to questions where there were overlapping themes.

Once all the participants forms were reviewed and themes were found and coded on the forms, the researcher was able to unpack the analysed data, as presented in Chapter Four.

3.9 Trustworthiness

The trustworthiness of a study refers to the degree of confidence one can put into the collection of data, the interpretation of the data and the quality of the study (Connelly, 2016). In order for this study to have been trustworthy, the researcher ensured that the findings were transferable and dependable. The transferability of research implies that the findings of this study can be applied to other studies or contexts, situations, times or even populations (Munthe-Kaas *et al.,* 2020). Transferability was assured by selecting participants from selected quintile one schools who had been teaching large classes before the outbreak of the COVID-19 pandemic and had never previously used rotational timetables. The assumption was that if the same study was replicated with participants from the same context, that is, with teachers teaching large classes in the same quintile level schools without rotational timetables, it would yield the same results. This means that if another study was conducted in South Africa in a different town, but with schools in the same situation as the selected schools and with the same conditions put in place for participant selection, then the same results would be yielded as in this study.

Having three schools from the same quintile and grade levels means the data was obtained from similar schools in terms of the amount of financial support from the DBE and grades of learners taught. Because these schools were similar, data obtained from the could schools be triangulated against one another, suggesting that data obtained was transferable to other quintile one schools with the same context (Ness, 2020).

Participants were also given a chance to complete the questionnaire anonymously. This helped create an environment that enabled the collection of accurate data that could be trusted. Since data was automatically collected on Google Forms and the researcher could not manipulate it, the data was dependable. The researcher was transparent during data collection and stated clearly how data was obtained, as that increased the dependability of the data (Moon *et al.,* 2016).

The dependability of a study refers to how reliable the process of the study is and whether all accepted standards are in place for the process of collection and analysis of data (Korstjens & Moser, 2018). This study was dependable because of the rigid standards followed by the researcher and the standards of accountability set by the Cape Peninsula University of Technology (CPUT) and the Western Cape Education Department (WCED) . A proposal was first written by the researcher outlining the research paper and timeline. Once the proposal was finalised, it was submitted to the CPUT Ethics Committee for review and approval. Approval was granted for the research to be conducted and the researcher then applied for permission to conduct research through the WCED local district office. Only once permission was granted by the WCED did the researcher then approach the principals of the three schools for their consent.

3.10 The researcher's position

The researcher was also a teacher but not at the schools where data was collected. He taught at a school that utilised small classes as a permanent approach to teaching and learning. Therefore he did not use his own school to gather data. To promote obejctivity of the data collected, the researcher was not present when the

particpants completed the questionnaires or when the principals explained the study to the participants.

Even though the researcher also lived in the same town as the participants, no formal relationship was established with them or the schools from which they were selected. The use of Google Forms helped to maintain a distance between the researcher and participants. Since the researcher was not present throughout the process of data collection, he did not push participants' answers or opinions that would support his study.

3.11 Ethical considerations

The study adhered to CPUT's ethical protocols. The researcher obtained clearance from the Faculty of Education of the Cape Peninsula University of Technology. He also obtained permission to conduct the study from the WCED. Participants were safeguarded from victimisation through human ethical approval. This was to ensure that no rights were infringed of all those involved in this study. To its fullest extent, the correct procedure for collecting and storing data was followed. Participants were informed that they were not coerced to take part in the study and that they could withdraw at any time.

A letter was sent to the principal of each of the selected schools to obtain permission to conduct the study at their schools. Principals were provided with a copy of the questions that would be included in the questionnaire so they also were aware of what questions their teachers would be asked (Appendix B). The researcher assured the principals that participants would be kept anonymous. He explained that instead of their real names, participants would be identified using numbers (e.g., Participant 1/2/3, etc.). Participants also had the option to leave their names out of the questionnaire. For anonymity purposes, the real names of the schools were kept anonymous. The researcher identified the schools using letters of the alphabet (e.g., School A/B/C, etc.).

The questionnaire opened with a brief summary of the study. Participants were requested to read and understand the purpose of the study before they could fill

out the questionnaires. Participants were then asked in the first question whether they gave consent or not to take part in the study. Since the questionnaire was online, participants had to type in a box to express their consent to participate in the study.

CHAPTER FOUR

RESULTS

This study investigated the perspectives of teachers on the effect that small class sizes and rotational timetables had on the recovery of academic curricula that were lost during the COVID-19 lockdown in South African quintile one and two schools in the WCED. Chapter Four presents the results on this investigation. The emergent themes are presented in this order in this chapter: biographical data of participants, effects of small classes on curriculum recovery, contribution of rotational timetables to curriculum recovery, and teachers' challenges with small classes and the use of rotational timetables.

4.1 Biographical data of participants

Table 3

Participant & School	Highest Qualification	Experience in Years
School A		
1	HDE	30
2	ACT	16
3	HDE	30
4	ACT	25
School B		
5	BED	3
6	BED Honours	18
7	BED	9
8	BED	5
School C		
9	BED	5
10	ADE	21
11	BED	37
12	BED	5
13	BED Honours	29

4.1 Effects of small classes on curriculum recovery

Participants expressed different emotions about returning to school after the hard lockdown had ended. A pattern that emerged in their responses was how nervous and uncertain they were about many issues. One of the issues they reported feeling unsure about was whether the schools would adhere to the COVID-19 regulations, for their own safety and that of the learners. Further, they were also unsure of whether they would be able to complete the academic curriculum, under the difficult circumstances they found themselves in. In addition, they were unsure of the support they would receive from their schools, the WCED, the DBE and the parents. Another concern they reported was whether learners would receive support from home, whether they would attend schools, if their and their learners' medical needs would be catered for, and whether small classes and rotational timetables would work to their and learners' benefit. As a result, participants reported feeling uncertain, uncomfortable, drained and confused about what they could expect from the unfamiliar teaching arrangement. This was confirmed by Participant 9 from School C, who mentioned that

> *It was scary at first, but after I got used to it, it was great! At first there was no clear direction of how things would be done, and whether things would work out.*

Participant 10 from School C reported feeling immense pressure, as she anticipated that there would be an expectation on the teachers to ensure that since the classes were smaller, learners' would have to excell, due to the greater opportunities for individual attention. However, the pressure she initially felt subsided after the management at their school expressed support for teachers during the uncertain time of the COVID-19 pandemic. Participant 10 put it thus:

> *The new arrangement of teaching small classes and rotational timetables brought many anxieties for us [teachers]. We know our schools. We know the DBE. We knew that with with these strategies, we would be expected to outperform ourselves, notwithstanding the COVID-19 conditions under which were teaching*.

Nonetheless, participants experienced small classes as giving them opportunities to work at each class's ability level, compared to when classes were larger. Teachers reported that they could plan their lessons around the academic level of each class. This meant that teachers had the opportunity to help learners learn more effectively in the small classes. Participant 5 from School B expressed her perception as follows:

> *I found that the learners were better able to capture new knowledge in the small-class environments. As a teacher, I was able to break down the work and make it easier for the learners to grasp, unlike in large classes where I could not provide for the individual needs of many learners within the limited time. In small classes, I could plan and work at the pace of each learner. Having the lesson prepped at their level, and being able to work at their pace, created a good learning environment for learners in small classes. This situation gave hope that we could easily recover the lost teaching and learning time.*

Participants reported that learners developed a heightened belief in themselves in small classes. Participant 3 from School A claimed that learners developed pride in their individual achievements, due to improved performance resulting from learning in a small class. She expressed her perception as follows:

> *The learners gained a better level of self-confidence, as they did better in the small classes than in large classes. Each learner improved at their own pace and we even found that it was fun for them working in small classes, as they expressed their enjoyment of learning in these classes. I loved being able to give each learner individual attention on a daily basis. I could pick up on any learning issues immediately and support my learners accordingly. This helped me to move on with the curriculumat a faster pace than if learners were still in large classes.*

Participant 3 from School A added that because the learners gained confidence from learning in small classes, they were willing to showcase their understanding of the

content in class, which had not been the case before the COVID-19 outbreak. Participant 3 had this to say,

> *Learning in small classes proved to be very healthy for learners. Even those learners who were timid and used to hide behind others in large classes came out of their comfort zone. We observed them becoming confident to try things out and eager to answer questions, something they shied away from in large classes. This helped us to detect gaps in their knowledge and assisted us to quickly cover the lost teaching time.*

Participant 6 from School B echoed Participant 3, reiterating learners' active participation in small classes. In the opinion of Participant 4 from School A, when the class sizes were reduced, learners quickly adapted to small classes as their teachers did. Participant 4 further stated that learners began to show signs of a better understanding of their work, which led to self-confidence, thanks to increased opportunities for one-on-one attention from their teachers:

> *Even though some learners were separated from their friends when classes were split according to rotational timetables, the mood remained jolly. They adjusted quickly and made new friends. I also noticed that their levels of comprehension improved than when they were in large classes. This improvement led to increased self-confidence and self-esteem, which helped us [teachers] to move faster with the curriculum to make up for the lost time.*

In support of Participant 4, Participant 9 from School C highlighted the cameradery that she observed among learners, emanating from learning in small classes. She indicated that

> *Small classes provided learners with more opportunities for collaboration with one another. This meant that any concept or part of the lesson some learners did not understand could be explained to*

others by those who understood it better. This fast tracked the recovery of lost teaching and learning time.

One of the most common benefits that participants mentioned was how much easier it was to maintain classroom management in a small class. They noted that their learners were generally ill-disciplined in large classes, compared to when they were placed in small classes during the COVID-19 pandemic. So, instead of spending a lot of time on disciplining the learners, they used that time to cover the lost teaching time. Participant 5 from School B articulated this point as follows:

The learner behaviour was very good with the smaller classes because you as an educator were able to maintain the discipline. You were able to keep your eyes on all your learners at the same time, whereas in a large class, it is difficult to do this. Good learner behavious helps with making curriculum recovery progress faster than if learners constantly misbehave.

Echoing Participant 5's words, Participant 6, also from School B, also highlighted learner discipline in small classes. However, she found that the usual culprits continued with their misbehaviour. She did, however, acknowledge that it was easier to manage poorly-behaved learners in smaller than larger classes. So, although they still had issues with a few unruly learners, they found it to be more manageable in smaller classes. Participant 6 divulged that

The discipline was much better in the small classes. There was no need to yell or raise your voice. But the learners that usually had discipline problems still gave us a hard time. These learners posed a threat to our goal of recovering lost teaching and learning time.

The same view was emphasised by Participant 9 from School C, who added that

With fewer learners in the class, there were fewer distractions from one another, and therefore better behaviour and effective teaching and

learning. This facilitated the process of covering a wide spectrum of the curriculum.

In a similar vein, Participant 11, who was also from School C, expressed positive observations about learner behaviour, mentioning that

> *There were fewer disciplinary challenges in small classes than in large classes. Learners were less distracted by other learners. Disciplinary challenges could be handled more effectively. Because they [learners] were fewer than in the classes before COVID-19, we found that they paid more attention to the teacher than before. This facilitated the learning and teaching process, thus expediting the curriculum-recovery goal.*

In addition, participants mentioned the benefit of gaining learners' attention in each lesson, resulting from small classes. Participant 4 from School A added that because the learners were more attentive, this led to their understanding work better, resulting in their being more excited to learn than when they were in large classes. Essentially, participants found that the learners' eagerness to learn benefitted the recovery of lost teaching and learning time.

Additional benefits that participants highlighted were that small classes allowed them to pay individual attention to the learners. In their view, this was a beneficial situation for both teachers and learners. Participant 6 explained that the more individual attention the learners received, the better they performed and the more their behaviour improved, as they were excited to learn and showcase their academic abilities. She elaborated that the learners felt they had personally achieved something great with learning in small classes, and that they were excited to share what they now knew. She asserted that

> *In large classes, some of the learners struggled to participate actively in class. This included shy ones. After rotational timetables were introduced and classes became smaller, those learners began to believe in themselves and to ask and answer questions. It shows that*

they gained self-esteem, which in turn was beneficial to our effort to complete the academic curriculum.

Participants also remarked that they had a much more meaningful relationship with each learner, and that the learners were more spontaneous in answering questions than when the classes were large. They mentioned that in the small classes, they had more time to ask their learners questions, bond with them and not simply rush to complete work due to the time constraints, as experienced in the large classes prior to the COVID-19 pandemic. This led to the teachers having more opportunities to pose more challenging questions which could extend the learners' creativity and critical-thinking skills. These opportunities also meant that participants could track learners' academic performance a lot more easily than in large classes, and help guide the learners more effectively in areas where they needed individual support. Participant 5 from School B added that the smaller classes gave them an opportunity to connect more with the learners and interact with them at a more academic and personal level. Emphasising this relationship, Participant 5 stated that the teachers realised that they got to "genuinely know them (learners) scholastically and personally, which helped with fast-tracking the curriculum".

In addition, participants noted that the streamlined curriculum that the DBE had developed in 2020 drastically reduced the amount of content that the teachers had to cover (DBE, 2020b). The streamlined curriculum, coupled with small classes, meant that teachers could cover new lessons a lot more efficiently, since the lesson plans were cut down to what the DBE deemed to be eseential content only. In turn, learners were in a position to keep up with the pace of the workload compared to before the outbreak of the COVID-19 pandemic when classes were larger and the curriculum was more packed. Participants pointed out that prior to the COVID-19 pandemic when classes were large, educators constantly fell behind with the annual lesson plans, and learners struggled to keep up with the pace in the larger classes because of how packed the curriculum was with content and how difficult it was for the teachers to teach in large classes. They explained that this was the reason the DBE streamlined the curriculum to accommodate the strain of the COVID-19 pandemic. Participant 1 from School A had this to say about the curriculum streamlined by the DBE:

> *Having to use the trimmed-down lesson plans meant we could focus on what was essential to help each learner complete what they needed to move to the next grade. The DBE identified lesson content that was a priority to complete for each grade for the year and our lesson plans had less content to cover.*

Reiterating the same view, Participant 9 mentioned that small classes with streamlined curricula meant that the teacher could pay attention to the learners who struggled with specific concepts. Participant 3 from School A mentioned benefits in the small class, including the fact that small classes led to a much more efficient delivery of the subject matter by educators and a better understanding of the content by the learners. She further mentioned that as a result, they (educators) could better ensure that their learners were not falling behind academically. She emphasised that these factors contributed to quick curriculum recovery.

According to Participant 5 from School B, the streamlined curriculum and small classes together helped benefit teaching and learning this way:

> *The revised trimmed-down teaching plan helped a lot because the curriculum was shortened to meet the needs of the learners. This in turn meant the lesson preparation was easier, and our lessons with the small classes helped increase learners' skills and knowledge*. A shorter curriculum assisted a great deal with recovering the lost teaching and learning time.

On the other hand, Participant 3 from School A remarked on the fast pace at which learners grasped the content they were taught in small classes. She observed that:

> *Learners' learning happened at a very fast pace in smaller classes, and learners were always ready and motivated to work harder than in the large classes where teachers had to push them to learn. Their motivation in turn helped us to recover the lost curriculum.*

Participant 7 from School B attributed the high marks that learners obtained in assessment tasks to the small class sizes. She indicated that all their formal assessments showed how the learners' test scores in small classes had improved, compared to before the outbreak of COVID-19.

It became evident that every participant took advantage of the small classes by doing their best to ensure that no child was left behind. Some participants advocated for small classes that were arranged according to learners' ability levels. Their reasoning was that this arrangement made it possible to streamline the teaching and learning processes and to help each class gain as much as possible. Participant 5 from School B held the view that

> *Learners missed so much learning time during the COVID-19 lockdown. So, smaller classes were needed to recover the learning time lost during the pandemic lockdown. It worked to differentiate the learners according to their abilities and then work with each ability group at their pace and with the content they needed help with. In the end, we as teachers were able to cover a lot of outstanding work.*

Some participants reflected on their own particular implementation of small classes and the benefits of that implementation. For example, Participant 7 from School B and participants from other two schools stated that educators took advantage of the smaller classes by using collaborative peer assistance. Educators who used this strategy testified that collaborative learning allowed learners to help one another and that by using this method, they were also able to cover more lesson content than they would have in large classes. This means by leveraging the benefits of smaller classes, teachers could work ahead and not fall behind as they did before the outbreak of the COVID-19 pandemic where they had large classes, which were not conducive to collaborative learning.

According to Participant 13 from School C, teachers took the DBE's streamlined curriculum and changed it slightly by adapting certain lessons according to where each of their classes were academically. She noted that this curriculum modification benefitted the learners by supporting those who were struggling. With some classes,

the teachers were able to extend their learners as they now had more opportunities in the small classes to cover extra work if the learners understood the content quicker. Echoing the same view, Participant 12 from School C claimed that they were able to offer follow-up lessons to the learners in small classes, which the teachers believed learners found more meaningful academically. To emphasize this thought, Participant 12 stated that

> *Without any prejudice, intervention strategies were easier to implement in small classes than in large classes, because of the flexibility and the effeciency of teaching small classes. This made almost every lesson a meaningful academic session for both teachers and learners, which benefitted our goal of covering as much work as we possibly could.*

In this section, participants presented positive perspectives of how small classes helped them to cover the lost teaching and learning time. These perspectives ranged from how small classes improved the teaching and learning processes and learner motivation, which all expedited the curriculum-recovery process. It was also shown that participants found that small classes enabled learners to feel more comfortable in class and to develop cameraderie with one another, which led to collaboration and sharing of knowledge among the learners. In addition, small classes as a curriculum-recovery strategy allowed more efficient classroom management and behaviour than when learners were in large classes. These factors appear to have helped participants to recover the lost teaching and learning time.

4.2 Contribution of rotational timetables to curriculum recovery

Participant 10 from School C intimated that with rotational timetables, teachers could reflect on what had gone well or not in the previous lesson with the first group of learners, and improve in the subsequent classes that met later. After this reflection, they could implement the improvements made in the initial class they had met with, thereby leaving no child behind. Participant 10 noted that this process was cyclic, elaborating that

> *Rotational timetables were a good strategy of covering work effectively. Even though the strategy was cyclic, it assured us that learners in all the groups understood the work we had covered. So we did not have to go back to it afterwards. We became reflective practitioners. This helped us to develop as teachers and learners to learn effectively. We covered a wide scope of the curriculum this way and left no child behind.*

For participant 10, reflection and action helped all the learners to experience success, which in turn motivated them to do better in each lesson. Participant 11, also from School C, on the other hand averred that they adapted each lesson to focus on what they deemed to be the most important aspect of the content to assist learners to move to the next grade. She mentioned that

> *We prioritised which content mattered the most for learners to move to the next grade. We were very selective. Our priority was to complete the curriculum.*

On the surface, this utterance sounds like a good idea. However, when analysed closely, it raises concerns about teaching learners to pass the examinations rather than for the sake of acquiring knowledge. The teachers noted that this helped the learners to work ahead and have spare time for remedial work.

Some participants reported feeling relieved by the use of rotational timetables, noting that their lesson preparation was reduced due to repeated lessons. For example, Participant 11 from School C claimed that her lesson presentations improved because she repeated the same lessons to different classes due to the rotational timetable. She further mentioned that this repetition gave her ample time to reflect on what had gone well with the preceding class, and which aspects of the lessons she needed to improve on when teaching the subsequent class. Consequently, subsequent classes benefitted from the rotational timetable, which she felt left no learners behind.

Participant 4 from School A was also of the opinion that learners were more engrossed in learning when rotational timetables were employed. She attributed this to the fact

that since learners did not attend classes every day when rotational timetables were used, this gave them time to rest. This observation was supported by Participant 5 from School B. Her view was that

> *Rotational timetables helped learners to get a rest from attending classes every day, bringing a big relief to them. On the days learners did not attend school, they rested and when they returned to class after two or three days, they were invigorated and eager to learn. With learners like that, we were encouraged to push the curriculum to completion.*

In this section, participants presented their perspectives on utilising a rotational timetable as a curriculum-recovery strategy. These perspectives included how the rotational timetable helped them to reflect on and improve their teaching practices, and how this reflection benefitted learners who attended classes according to rotational timetabling. Repeating lessons and reflecting on what had worked and not worked, coupled with learners' motivation and eagerness to learn after taking some rest offered by the rotation, appear to have helped to propel curriculum recovery during the COVID-19 pandemic and after the lockdown.

4.3 Teachers' challenges with teaching small classes and the use of rotational timetables

Before the DBE had released the abridged or streamlined lesson plans, participants reported a need to adapt their lesson plans to accommodate the rotational timetable and small classes. However, they reported that they lacked the skills to do this, until the DBE intervened and released the streamlined curriculum. But even with these plans, they still felt that their schools did not have sufficient facilities to cater for the many small classes and the shortage of teaching staff. Some participants also found it challenging to motivate learners to work again after the constant rest days at home.

Although Participant 6 was mostly positive about the introduction of small classes and the rotational timetable, she felt that adapting her lesson plan meant having more

repeated lessons, which she found tedious. She also felt that she had to extend the dates on which to complete the content, because learners did not spend the same amount of time in class per week. In addition, she reported her frustration at the demands places on the teaching staff, arguing that smaller classes meant that more teachers were needed on duty to supervise the increased numbers of classes. Having more classes but the same number of teaching staff led to a shortage of teachers to handle the extra classes. Participant 6 explained that she had to teach other grades to help compensate for the added classes without being paid extra income. She elaborated as follows:

> *I needed to adapt my lesson planning because I was reponsible to teach more than one grade. Before the COVID-19 pandemic, I only taught grade seven, but during the COVID-19 pandemic I had to teach grade five, six and seven. This meant I had two extra grades to teach, compared to before the outbreak of the COVID-19 pandemic. This workload brought a lot of challenges and extra work for me. The mental preparation to arrange the lessons and not confuse the classes was tiring. Under these circumstances, it was difficult to recover the lost teaching and learning time*

Altering the lesson plans to accommodate the new arrangement of teaching small classes, and using rotational timetables was high on the agenda of participants. Some of them mentioned that when these strategies were introduced, they were least prepared for them. Schools expected them to change their lesson plans to accommodate the extra small classes and the slow pace resulting from using rotational timetables. They asserted that this initiative added work to their already overloaded workloads. However, they acknowledged that the DBE later provided them with adjusted lesson plans, which slightly helped to solve these issues. Participants 7, 8 (from School B) and 9 (from School C) reported encountering the same challenges with their lesson plans and that they had to keep adjusting them until the DBE provided them with streamlined lesson plans. Participant 7 commented that

> *It was tedious to adjust the original lesson plans. It added to our already overloaded workloads. It was a big relief to receive adjusted*

lesson plans from the DBE, but by then we had already lost a lot of teaching time. The DBE lesson plans helped but it was too little too late.

The initial struggle that some participants mentioned was that their schools were not equipped with adequate resources, such as extra classrooms to accommodate small classes and rotational timetabling after the hard lockdown. Participant 2 from School A added that her school did not have an adequate number of classrooms or a large enough classroom and halls to allow all their learners to observe social distancing. She observed that

The number of our learners far exceeded the size of our school and facilities, such as halls and large classrooms. Due to these constraints, recovering the academic curriculum was not easy.

In support of Participant 2, Participant 5 from School B reiterated that their school too did not have adequate classrooms to accommodate all the learners at the same time. The consequence was that teachers had to adopt the rotational timetable strategy, as this meant that many classrooms could be used in turns to accommodate learners. Participant 5 felt that the rotational timetable approach slightly helped to accommodate learners with the required social distancing measures, but it was not effective enough to help with curriculum recovery. Other teachers felt under pressure to squeeze in a lot of work to help cover the content, as shown by Participant 5's statement:

Because of the challenges with space, on the days we met with the learners, we felt that we had to squeeze in a lot of content., albeit with streamlined curriculum. We realised that even with streamlined curriculum, we would not recover the curriculum, as there were too many obstacles along the way.

For Participant 4 from School A, the burning issue related to the inability to reach learners with learning disabilities, such as ADHD, the autism spectrum or general learning difficulties. She argued that

> *Working with small groups of learners did not help us much with reaching learners with learning problems, such as learners on the autism spectrum, ADHD or intellectual learning barriers.*

It would have been helpful to have a follow-up interview with Participant 4 so that she could have clarified her concern. Unfortunately, no participant was willing to undertake follow-up interviews. Contrary to Participant 4's view, other participants who had raised the matter of learners with disabilities mentioned that the first time they could help these learners effectively was when they were teaching small classes.

With regards to Participant 6 from School B, getting learners back to class after they had stayed home due to the timetable rotation presented serious challenges. She highlighted the plight of learners failing to do homework as a result of being away from school for two or three days a week, as well as due to the lack of parental support. It became evident that the constant breaks in between the school days brought immense disruptions to teaching and learning. This is how Participant 6 expressed this concern:

> *Some learners seemed to enjoy the breaks they got from alternating classes caused by rotational timetables. When they were supposed to come back to class, some of them did not turn up. Homework suffered tremendously, as some learners seemed to forget about school and homework on those days they were away. Parental support was nil for some of them. Without this support, you cannot claim to make success with recovering lost curriculum.*

Resonating the same concern, some participants raised the issue of learner absenteeism, contending that even though they tried hard to not leave any learner behind, the high rate of learner absenteeism from school led to many of them falling behind. Because online learning was not provided to these learners, when they were at home they could not work, and had no support from caregivers or parents. Participant 11 put it thus:

> *Unlike privileged schools that had digital resources and Wi-Fi, our school and learners had no access to e-learning on the days they were*

not at school. Consequently, no learning took place on those days. It appears that parents were not available to assist their children either, because learners came back to school without doing their homework. For this reason, they were left behind and the efforts of recovering the lost curriculum fell out the window.

The theme of poor learner support feeding into learner truancy appeared to be a perpertual concern for participants. For example, Participant 13 pointed out that learner absenteeism was aggravated by the fact that there was no home support, as parents were often at work. As a result, any there was no positive encouragement coming from home for children to attend school regularly to do their work. As a result, learners simply ignored the work packs provided for them. This was a major obstacle for participants to catch up the lost teaching and learning time. Participant 12 from School C, who agreed with Participant 11, commented that,

The reason it was sometimes difficult to claim to have recovered the lost curriculum was due to some learners having fallen behind with their lessons. The obvious concern is that some of the learners did not always have support from home to motivate them to do the homework that we had prepared and made available to them. This problem was a drawback and posed a threat to our efforts to recover lost curricuum.

Participant 9 reiterated the same view, adding that,

It is unfortunate that learners tended to bunk classes, partly because they found a weakness in the system and also because there was no monitoring at home, as their parents were at work. Consequently, these problems challenged the efforts of curriculum recovery on the part of the teachers.

Several other participants reported that they had compiled workpacks for the learners for when they did not come to school. The workpacks had revision work for the learners to complete on the days they did not come to school due to the rotational timetables. Unfortunately, some of the learners' parents either did not collect them or the learners

did not complete them at home when they returned to school. Although the days spent at home were lost, some participants acknowledged that it was a safe option for learners due to the severity of the virus during the early stages of the COVID-19 pandemic.

In this section, it was found that the challenges related to planning to teach small classes and for using rotational timetables were that they were tedious and unprecedented. However, participants appear to have found solace in the adjusted lesson plans that the DBE provided to them. These plans appear to have lessened the amount of work that they felt would have added to their extended workloads. Participants also expressed concerns about learners who seemed to have felt comfortable with the days they were not at school and decided to extend them into holidays. They also felt that learner absenteeism, which was fueled by lack of parental support, impacted negatively on their efforts to recover lost teaching and learning time. This situation highlights the need for collaboration between schools and families, and between the DBE and schools. These collaborations might have mitigated the challenges presented in this section.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

This research sought out to discover the effectiveness of small classes and rotational timetables as curriculum-recovery teaching strategies during the COVID-19 pandemic**.** Participants were selected from three primary schools that taught large classes before the outbreak of the COVID-19 pandemic, which were later split into small classes using rotational timetables after the COVID-19 lockdown. Qualitative data was collected using a Google Forms questionnaire and analysed thematically. The main research question was, “What are teachers’ perspectives on the use of rotational timetables and small classes as effective curriculum recovery teaching strategies during the Coronavirus-19 pandemic?” Chapter Five presents an analytical discussion of the results obtained from this study.

The results of this study show that small classes contributed immensely to curriculum recovery during the COVID-19 pandemic. Participants outlined many positive effects on curriculum recovery associated with this strategy. For example, they noted how small classes brought about improvement in the behaviour of learners. These findings resonate with Finn (2019), who established a direct relationship between small classes and positive learner behaviour. The same view is supported by Laitsch *et al*. (2021), who assert that small classes often indicate quality education and excellent learner discipline due to the individual attention and feedback. Cumulatively, these factors enabled participants to recover the lost teaching and learning time, as they did not have to waste time on managing learners but had to use that time effectively to recover the lost academic curriculum.

Participants further highlighted improved relationships between teachers and learners, and between learners and learners, as a result of small-class environments, and how these relationships allowed collaboration among learners. Existing literature (cf. Pedder, 2006; Da Luz, 2015) has illustrated a connection between good relationships and effective learning, which, in the context of this study and according to participants’

views, contributed to effective curriculum coverage. For example, Pedder (2006) emphasises how small classes enable a better teacher-learner relationship. Similarly, Da Luz (2015) correlates a good relationship with strong academic performace, which is what several participants in this study also observed. Therefore, good relationships in a teaching and learning context cannot be overemphasised. In the context of this study, participants found that they were able to connect more with their learners and they found a better work ethic, thanks to the improved relationships.

There were important aspects of the rotational timetables that particpants found to have contributed to effective curriculum recovery. In this study, three models of rotational timetables were implemented, namely, platooning, in which case one group of learners attend classes in the morning and the other half in the afternoon. The second model was when learners alternated days on which they attended classes. The third model was when learners returned to classes in tiers, according to the grade levels. It appears that in this study, participants focused on the model in which learners alternated attendance days. They cited the advantage of this model as having given learners time to rejuvenate, which invigorated them and contributed to effective learning, and in turn, to effective curriculum recovery.

Overall, there is evidence in the participants' statements that small classes and rotational timetables served as effective curriculum-recovery strategies. It is worth noting that at the heart of curriculum recovery are human beings, and that if these parties work harmoniously, they can achieve good results. The opposite is also true. For example, participants reported challenges which, if there was collaboration between stakeholders (DBE, schools, families) and they were working together, would have been mitigated. For example, participants reported how learners bunked classes after they had been away for two or three days, a fact also raised by Wallinger (1998). Participants also reported that learners failed to do homework when rotational timetables were used. It is safe to argue that if parents were involved in their children's learning, a fact emphasised by Maqoqa (2023) and Munje and Mncube (2018), this challenge could have been mitigated. Failure of learners to perform their tasks of attending classes and doing homework lies squarely on the lack of cooperation between schools and families. The relationship between schools and families cannot be overemphasised. Durisic and Bunijevac (2017) highlight the importance of this

relationship. Therefore, there is a need to strengthen these links, as one cannot function effectively without the other. According to Bronfenbrenner's ecological systems theory (1990) the family is the microsystem - the centre of a child's schooling that consists of family (e.g., parents, siblings, extended family members). The microsystem connects the child with the mesosystem - the connection of the child with the school (e.g. teachers, peers). It is therefore safe to assume that if the school and families had worked in tandem, learners would have attended school and did their homework promptly, thereby facilitating the process of effective curriculum recovery. In the context of this study, it is likely that the lack of this support system posed a threat to the participants' efforts to recover lost teaching and learning time.

The results shown in Chapter 4 reveal how participants perceived the effects of small classes and rotational timetables. Many of the participants' perceptions showed that they enjoyed small classes and were able to take advantage of the system, allowing their learners to do as best they possibly could have. However, they noted that the rotational timetable caused them to have less contact time with the learners and also caused work overload due to having the same number of staff to supervise the increased number of classes. They also noted that the rotational timetable created days when some learners were absent from school, and due to the lack of support from home, work learned at school was not always followed up learners.

Participants also highlighted how the streamlined DBE lesson plans assisted them with curriculum recovery. When considering the amount of teaching and learning time that was lost when lockdowns were extended, it is safe to argue that the DBE's intervention with these lesson plans was a reasonable one for teachers who had no direction. It would appear that the schools and the WCED had no contingency plan in place to assist the participants. It is also possible that there might have been other plans in the pipeline but they had not yet taken effect. What is at stake is the DBE's initiative of streamlining the lesson plans. Ideally, this mean taking out some parts of the curriculum and prioritising what is regarded the essentials. While this intervention may have been realistic at the time, in hindsight, it is questionable because it leaves a gaping wound in the learners' knowledge that may be very difficult or impossible to close in the future. Based on this observation, one can argue that in an effort to recover the lost curriculum elements, some curricular activitie or foundation was inevitably lost

due to the act of streamlining the lesson plans. Therefore, streamlining the lesson plans was tantamount to solving a problem by creating others.

Some participants mentioned that to facilitate curriculum recovery, they focused only on the knowledge that they deemed essential. In other words, they taught the content that would enable learners to move to the next grade. In so doing, they were teaching to for assessment. Just like the streamlining of the lesson plans presented earlier, focusing on the essentials presents its own ramifications of teaching some content and leaving out some. When scrutinised carefully, one can conclude that doing so strips the curriculum of its essence. The same could be said that teaching to the test is similar to solving a problem by creating another. Such a strategy cannot be perceived as curriculum recovery.

It is noted that schools in higher quintiles were able to continue teaching online, which by implication suggests that they did not lose teaching and learning time and opportunity. This situation lays bare the inequalities that exist among learners from different socie-economic backgrounds. In a more equitable society, all the learners should have facilities that allow them to work any time and anywhere. This digital divide has serious implication for how the DBE distributes learning resources.

5.2 Conclusion

The results of this study have indicated that the use of small classes and rotational timetables somehow helped the participants to recover lost teaching and learning time, albeit with challenges, most of which were associated with the employment of rotational timetables. The analytical discussion presented above situates the ineffectiveness of these strategies at a deeper level than just participants and learners, but rather in the echelons of family, school, WCED and the DBE. These are the structures that should have provided participants with the support they needed to recover the curriculum effectively. Parents should have supported the learners and ensured that they attended school regularly on the days they were scheduled to attend, and that they did their homework promptly, thereby strengthening the efforts of recovering the academic curriculum. In addition, the schools, the WCED and the

DBE should have had contingency plans in place for the instability brought about by the COVID-19 pandemic. In other words, they should have been more proactive and responsive. These plans should have directly addressed how the schools that could not continue with online teaching and learning had to function so that no learner was left behind. It is clear that without the interventions of these systems, teachers were bound to encounter challenges along the way.

5.3 Recommendations

Based on the results of this study, the following recommendations are made:

On the issue of learners failing to attend school on the days following their relief, and on their failure to do homework, it is recommended that parental involvement should be established. School and families must establish collaborations for the best interest of the learners.

Regarding lack of contingency plans, as reflected in the teachers not being clear about how they were going to implement curriculum recovery, it is recommended that the schools, the school districts, the WCED, and the DBE work together to formulate strategies and/or contingency plans that schools can employ in times of crisis in educaiton.

With regards to schools in quintiles 1 and 2 not being able to continue with teaching and learning online, due to the lack of resources, it is recommended that the DBE distribues funds and resources equitably, thereby ensuring that every learner has an equal opportunity to succeed.

The issue of cost of streamlining the lesson plans was highlighted by participants. Seeing that the damage has now been done, it is recommended that the DBE develop a strategy of how schools must catch up and cover the gaps in the learners' knowledge emanating from the stripping of the curriculum. In addiiton, the practice of teaching to the test must be highly discouraged. Education is about acquisition of knowledge for the good of the society. It is not about passing and promoting learners to the next grade.

It is clear from the results of this study that the struggle to cover the gaps in the curriculum emanating from the advent of the COVID-19 pandemic is far from over. Achieving this goal is ongoing. With good planning, this dream may be realised some day but without this planning and strategising, learners will continue experiencing the effect of this knowledge gap their whole lives.

5.4 Recommendations for future research

Future research should investigate how other countries globally mitigated the effects of the loss on teaching and learning time brought about by the COVID-19 pandemic. Such research can become a reservoir of knowledge for those countries that still struggle with this issue.

Other research should investigate issues of consequence management in schools. Such research involves the process of predicting, identifying, then managing and minimising, the negative social, economic, and environmental outcomes from an event. This research can help schools, school districts and departments of education to predict future crises (e.g., crises caused by climate change) and identify ways to manage the effects of those crises.

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ADDENDA

6.1 Appendix A Data collection questionnaire

Teachers' perspectives on the impact of small classes as effective recovery teaching method during Coronavirus-19 pandemic

This is an optional anonymous form to collect data on how you found the changes as a teacher during the Covid-19 pandemic. Initially, large spaces were needed in classrooms and this led to rotational learning programmes and rotational timetables. This helped limit the number of learners in the classrooms to help maintain large spaces in the rooms and limit the spread of the virus. We would like to gather your feelings and perceptions on how effective this strategy of teaching using small classes was to maintain learning and recover lost learning time from the pandemic and if it could be used again if a future pandemic came again where class sizes were a needed solution.

Please note that no participants' original names will be used in the data presentations. Instead pseudonyms will be given to protect each participants' identity. If at any time you would like to withdraw your questionnaire information you may do so by emailing DJLEHY@GMAIL.COM and your data will be deleted.

Your input is appreciated.

1. Do you consent to take part in this research as a teacher who has been teaching at least from January 2020? (Write "I agree/disagree to take part in this study")
2. Name (Optional)
3. What is your teaching experience?
4. What is your highest level of qualification in teaching?
5. How did you experience teaching a small class during the initial return to school from the Covid-19 pandemic after the hard lockdown?
6. How did your lesson preparation change as a result of having small classes?
7. How did small classes help to create one-on-one time with the learners?
8. How was the learner behaviour in the small classes compared to large classes?

9. Do you feel that learners were better able to attain new knowledge in a small class environment than in large classes? Why do you think so?
10. Did you find that you were able to catch up on any lost work from the hard lockdown once you were using small classes? Why do you think so?
11. Did you feel that small classes as a method was a good strategy for recovering lost time during the pandemic? Why do you think so?
12. Do you feel your school had adequate facilities prior to the pandemic to support the learners during the hard lockdown?
13. Would you be willing to have an interview based on your answers to these questions? If so, please fill in your contact details below.

6.2 Appendix B Consent Form – Principal of school

Consent to take part in the study: Teachers' perspectives on the impact of small classes as effective recovery teaching method during Coronavirus-19 pandemic

I,……..(Name and surname), consent to Mr Lehy conducting his research at my school. I understand that teacher and school participation is voluntary and I agree that I was not coerced in any way to take part in the study to be conducted at my school. I understand that the data collected will be destroyed after three years and the usage of this data is for this study and other papers written under this study.

_____

Signed

6.3 Appendix C – Ethics Letter

Faculty of Education
Highbury Road
Mowbray
7700
Tel: +27 21 680 1506

FACULTY OF EDUCATION

On the **26 April 2023**, the Chairperson of the Faculty Research Ethics Committee of the Cape Peninsula University of Technology granted ethics approval **(EFEC 2-04/2023)** to **D. Lehy** for a **MEd**.

Title:	**Teachers' perspectives on the impact of small classes as effective recovery teaching method during Coronavirus-19 pandemic**

Comments:

The Faculty Research Ethics Committee unconditionally grants ethical clearance for this study. This clearance is valid until **31st December 2026**. Permission is granted to conduct research in the **Faculty of Education**. Research activities are restricted to those details in the research project as outlined by the Ethics application. Any changes wrought to the described study must be reported to the Ethics committee immediately.

Date: 3 May 2023

Prof. Zayd Waghid

Chair of the Faculty Research Ethics committee

Faculty of Education

efec@cput.ac.za

6.4 Appendix D – WCED Research Permission Letter

Western Cape Government
Education

Directorate: Research

meshack.kanzi@westerncape.gov.za
Tel: +27 021 467 2350
Fax: 086 590 2282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 16375E04C0007E6-20230503
ENQUIRIES: Mr M Kanzi

Mr Davin Lehy
31 Lyons Street
Bergsig
Worcester
6850

Dear Davin Lehy,

RESEARCH PROPOSAL: TEACHERS' PERSPECTIVES ON THE IMPACT OF SMALL CLASSES AS EFFECTIVE RECOVERY TEACHING METHOD DURING CORONAVIRUS-19 PANDEMIC.

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **13 June 2023 till 30 September 2023.**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Mr M Kanzi at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000

We wish you success in your research.

Kind regards,
Meshack Kanzi
Directorate: Research
DATE: 13 June 2023