# Creating learning spaces for the 21st century learning in rural secondary schools: A leadership perspective

**by**

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**A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Education.**

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**Date submitted: September 2022**

## DECLARATION

I, **Dumisani Brian Zondo** declare that:

1. The research report in this thesis (Creating learning spaces of the 21st century learning in rural secondary schools: A case study) excerpt where otherwise indicated, is my original work.
2. This thesis has not been submitted for any degree or examination at any other university.
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Signed: Date: June 2022

## STATEMENT BY SUPERVISORS

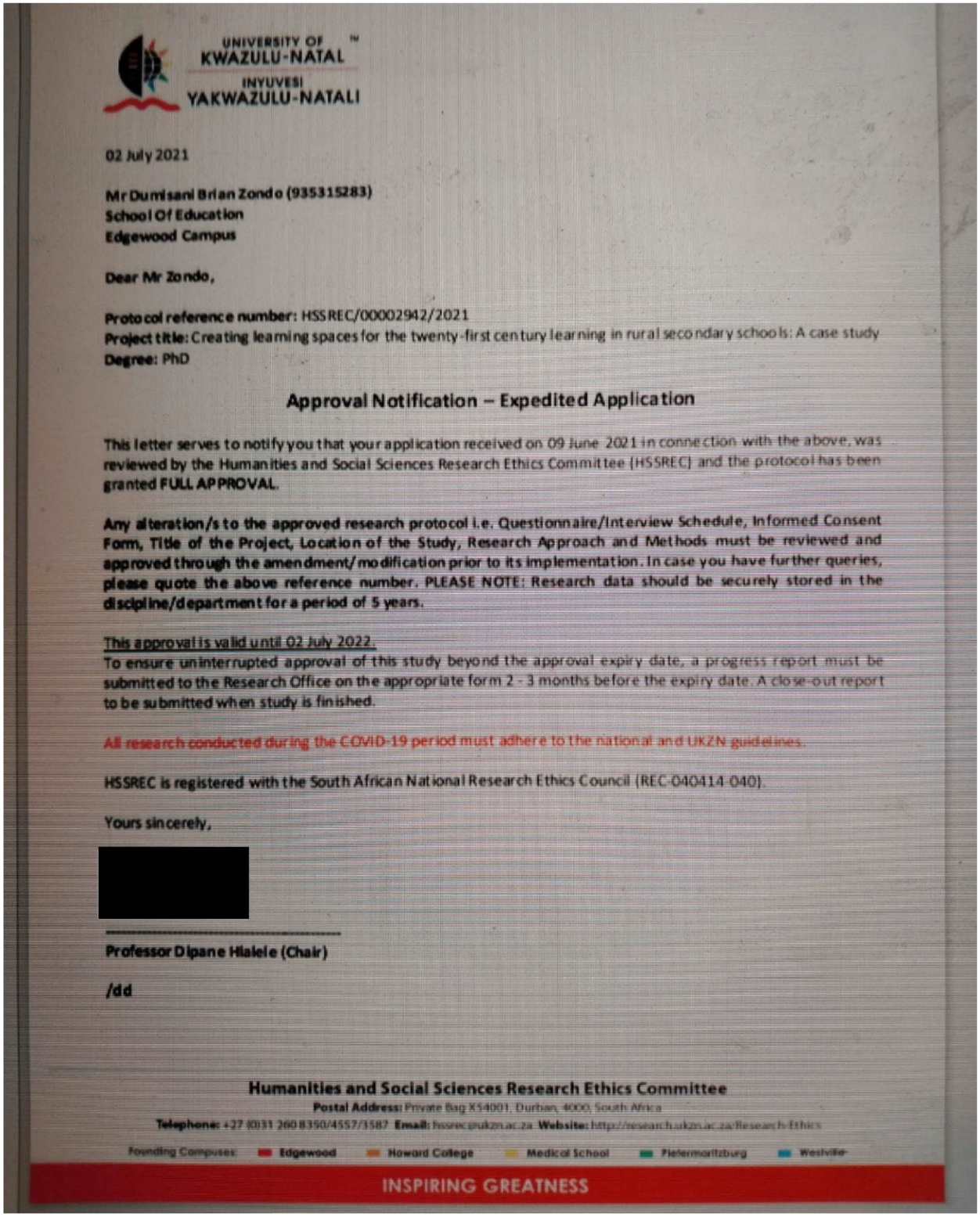
This thesis has been submitted with our approval.

**04/12/2022**

**Supervisor: Dr B.N.C.K. Mkhize** **Date**

**Supervisor: Dr S.D. Bayeni** **Date**

# ETHICAL APPROVAL



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INYUVESI YAKWAZULU-NATALI

02 July 2021

**Mr Dumisani Brian Zondo (935315283)**
**School Of Education**
**Edgewood Campus**

**Dear Mr Zondo,**

**Protocol reference number:** HSSREC/00002942/2021
**Project title:** Creating learning spaces for the twenty-first century learning in rural secondary schools: A case study
**Degree:** PhD

**Approval Notification – Expedited Application**

This letter serves to notify you that your application received on 09 June 2021 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL.**

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

This approval is valid until 02 July 2022.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

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

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

Yours sincerely,

[redacted]

**Professor Dipane Hlalele (Chair)**

**/dd**

**Humanities and Social Sciences Research Ethics Committee**
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INSPIRING GREATNESS

## DEDICATION

- First and foremost, I dedicate this thesis to God, the Almighty for His grace, unconditional and continuous favour and guide from the beginning of this academic journey.

- I also dedicate my thesis to my late mother, Ngenzeni Agnes Zondo and my late father Mbuzeni Joseph Zondo (Unduku zeshinga likaNdaba) for being passionate about education and for his inspiration he gave me when he encouraged us as his children to continue studying. He used to say that the sky is the limit.

## ACKNOWLEDGEMENTS

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- I would like to express my gratitude to the KwaZulu-Natal Department of Education for granting me permission to conduct this research in the sampled schools.
- My sincere gratitude goes to school principals, departmental heads and teachers of the participating schools for sharing information with me that made this study a success.
- To my wife Nomusa Faith Zondo, my four kids, Mlondi, Luyanda, Khwezi and Khanya for their support and helping me to make time to get my academic work done.
- To my fellow student who motivated and encouraged me to never give up, Dr Desmond Monde Gogo. He gave me support while he was facing his own challenges.

## ABSTRACT

This study focuses on the practices of school leadership in two rural secondary schools as they create learning spaces that support the 21st century learning. The study adopted a qualitative multiple-sites case study design that was underpinned by interpretivist paradigm. Data was generated from 13 participants who were purposively selected, through the use of semi-structured interviews and documents reviews. Transformational Leadership Theory by Bass and Riggio and Instructional Leadership Model by Hallinger and Murphy were adopted as a theoretical framework for this study. The data that was generated through the two techniques (interviews and documents reviews) was analysed through the complementary use of content analysis and inductive analyses The findings showed that school leadership embracing collaborative school climate that enabled the intrinsically motivated and technology savvy teachers to reconfigure the traditional classroom conceptualisation into learning spaces for the 21st century learning. Such teachers infused the technological theories in teaching and learning and adopted a learner-centric pedagogy that prioritises the 21st century skills. The study contributes in different ways, including the destabilisation of the notion that transformational leadership is only exercised by people in formal position of leadership. The power of bottom-up influence came to the fore in this thesis.

## ABBREVIATIONS/ ACRONYMS

| | |
|---|---|
| ARACY | Australian Research Alliance for Children and Youth |
| CAT | Computer Application Technology |
| COVID-19 | Coronavirus disease 2019 |
| CPTD | Continuing Professional Teacher Development |
| DH | Departmental Head |
| DoE | Department of Education |
| EGD | Engineering and Graphic Design |
| HoD | Head of Department |
| ICT | Information and Communication Technology |
| IQMS | Integrated Quality Management System |
| JISC | Joint Information Systems Committee |
| KZNDBE | KwaZulu-Natal Department of Basic Education |
| M. Ed | Master of Education |
| MET | Mathematics, Engineering and Technology |
| NEA | National Education Association |
| OECD | Organisation of Economic Co-operation and Development |
| RSA | Republic of South Africa |
| SAPS | South African Police Services |
| SASA | South Africa Schools Act |
| SBTPD | School Based Teacher Professional Development |
| SDP | School Development plan |
| SDT | School Development Team |
| SGB | School Governing Body |
| SIP | School Improvement Plan |
| TPACK | Technological, Pedagogical and Content Knowledge |
| TPD | Teacher professional development |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| WHO | World Health Organisation |

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# CHAPTER ONE

# ORIENTATION TO THE STUDY

## 1.1 Introduction

The study that is reported in this thesis is a case study that examined the manner in which school leadership creates learning spaces for the 21st century learning in two rural secondary schools located in the iLembe District, KwaZulu-Natal, South Africa. The study was conducted based on the assumption that the context influences the ways in which people behave and do their activities (Blose & Naicker, 2018; Copeland, 2010; Myende, Ncwane & Bhengu, 2022). This is the first chapter and it sets the scene for the organisation of this study. As I have indicated in my opening statement, the study explored how learning spaces for the 21st century can be created in rural secondary schools. I begin this chapter by presenting the background to the study; this is followed by the statement of the problem. Following the statement of the problem is the justification of conducting this study, and the rationale for the study is presented from the perspectives of personal, professional and theoretical levels of analysis. I then present the significance of the study and the research questions. I also present the definitions of key terms, delimitation, as well as the outline of the study.

## 1.2 Background to the study

Education systems internationally were initially designed in the previous decades with the assumption that learning occurs only in traditional brick and mortar classrooms (Thomas, 2010). These classrooms were characterised by fixed buildings, with the teacher at the centre of teaching and learning (Thomas, 2010). In view of the initial architectural design of traditional classrooms, they are now ill-equipped to support the 21st century learning (Carvalho & Yeoman, 2018). In fact, the 21st century learning advocates for the notion of learners' self-directed and autonomous learning (Fadhlullah & Ahmed, 2017; Zolfaghari et al., 2022) for learning to take place anywhere, anytime (Oblinger, 2006; Yahaya, 2022; Zolfaghari, Ashraf, Khodabakhshzadeh & Zareian, 2022). The new conception of learning in the 21st century has given effect to a paradigm shift where learner-centric learning is prioritised (Neill & Etheridge, 2008). In this regard, it is important for the existing traditional classrooms to be reconfigured with the main objective being that of creating learning spaces that best support 21st century learning.

Twenty first century learning provides learners from both developed and developing countries with the opportunity of develop 21st century skills for them to participate meaningfully and benefit from globalised knowledge economies (Bedir, 2019; Van Laar, Van Deursen, Van Dijk & De Haan, 2020). The new affordances for creating learning spaces that best support 21st century learning is not limited to changes in the physical infrastructure, but there is also a learning dimension (Sprague, Williamson & Foulger, 2022). In this regard, developed countries use their educational policies to develop holistic competencies with infused technological resources for effective application of learner-centric pedagogies and learning (González-Pérez, Ramírez-Montoya, 2022). The provision of furniture and the infusion of advanced technologies in education is critical in that regard (Sprague, Williamson & Foulger, 2022).

Developing countries such as South Africa, India, Pakistan, Nepal and Afghanistan, to mention but a few, are lagging behind with regards to promoting 21st century learning in schools (Mathrani, Sarvesh & Umer, 2022). There is also paucity of information in the literature regarding 21st century learning spaces and learner-centric pedagogies, particularly in South Africa (Sofi-Karim, Bali & Rached, 2022). In this regard, there is an existing knowledge gap on the actual school leadership and teacher activities with respect to reconfiguring classrooms as learning spaces for 21st century learning for learners.

Notably, 21st century learning spaces and learner-centric pedagogies require key stakeholders in the education sector to harness and use technology for teaching and learning purposes (Siyaya, Omotoso, Uleanya & Gamede, 2022). Teachers are agents of transformation and are people who take decisions about what can work in their respective spaces for teaching and learning when interacting with learners (Da Silva, 2022). In that light, it is worth noting that the physical dimension of learning spaces for 21st century learning does not necessarily cause a direct shift in pedagogical practices (Campbell, Saltmarsh, Chapman & Drew, 2013; Mulcahy, Cleveland & Aberton, 2015). Importantly, teachers with metacognitive abilities can successfully reconfigure classrooms to become learning spaces that best support learner-centric pedagogical practices in any given context, including rurality (Arjaya, Hermawan, Ekayanti & Paraniti, 2023).

Infusing technology in the classroom (the physical dimension of learning spaces) needs teachers' positive orientation towards technology for them to actively incorporate it into their pedagogic practices (Tondeur, Van Braak, Ertmer & Ottenbreit-Leftwich, 2017). On the same breadth, effective use of information and Communication Technology (ICT) in teaching and learning for

creating both physical and virtual learning spaces is influenced by the level of ICT skills that teachers possess (Vadachalam & Chimbo, 2017; Siyaya et al. 2022). Regrettably, Terry (2014) avers that most secondary school teachers in the iLembe District in KwaZulu-Natal Province are deficient in terms of ICT skills. It can be noted that two secondary schools in the iLembe District had gained prominence in their profound success of infusing technology in teaching and learning in spite of complex rural contextual constraint at play. Hence, the two schools in question were purposively selected to participate in this study in 2020.

There are various factors that are considered in determining how, where, when and the what of learning spaces that can be created (Bülow, 2022). According to Bülow (2022), the determining factors include the influence of social and physical elements on creating learning spaces as these factors create the overall context that provides new possibilities and impose limitations as well. The issue of context, especially rural areas where schools are located, face multiple deprivations (Mkhize & Bhengu, 2018). Because of that, such contextual factors have an impact on how school leaders and teachers execute their responsibilities.

This study focuses on exploring strategies that school leaders and teachers in rural secondary schools are using in creating learning spaces that best support 21st century learning for learners. This study was conducted under the assumption that it is difficult to create learning spaces in rural settings. Therefore, this study also sought to explore school leadership activities and that of teachers in creating learning spaces that best support 21st century learning especially in challenging contexts. Implied in this purpose is an inherent need to fill the gap that I have identified in the literature reviewed which relates to the context and its connection with the actual teaching and learning activities of both the school leaders and the teachers in transforming schools to be relevant in the era of the 21st century learning for learners.

### 1.3 Statement of the problem

The current 21st century global economies require the workforce that has acquired several critical skills in order to participate meaningfully in the global economies and in advancing maximal production and further developments for future endeavours (Du Toit-Brits, 2019; Van Laar, et al. 2020). The required 21st century critical skills (Van Laar, Van Deursen, Van Dijk & De Haan, 2020; Yulianto, Pramudya & Slamet, 2019**)** are basically developed in learners when traditional classrooms and overall school environment have been reconfigured and re-engineered into flexible

physical learning spaces (Neill & Etheridge, 2008). Therefore, learning spaces must be reconfigured in such a way that they support the multiplicity of learner-centric pedagogical practices of the 21st century learning for learners (Zolfaghari, Ashraf, Khodabakhshzadeh & Zareian, 2022). Knowing that the built physical learning spaces are not the end on their own, but that they have to support 21st century learning for learners, may propel current teachers to adapt to learner-centric pedagogical practices (Niemi, 2021). The efficacy of this process is highly reliant on infusing educational technologies in teaching and learning for the 21st century. Hence, the creation of learning spaces for the 21st century learning, attributive pedagogies and technology are inextricably intertwined (Wilson & Randall, 2010).

The emergence of 21st century learning spaces, 21st century learner self-directed learning (Jeong, 2022) and learner-centric pedagogies are a response to the influx of educational technologies and new social order (Carvalho & Yeoman, 2018). For this change to take place, it is important to engage the users of learning spaces such as teachers and learners (Bøjer, 2021; Thomas, 2010). With all the necessary activities having been adhered into, 21st century learning takes place everywhere anytime when all the affordances are in place (Brown & Lippincolt, 2003; Oblinger, 2006). These attributes of the creation of learning spaces are realised and are well in advance in the developed countries such as Australia (Kvan, 2021); New Zealand (Fischer, 2021) and Finland (Reinius, Korhonen & Hakkarainen, 2021).

There is a plethora of challenges in economically developing countries, and these include the non-availability of physical structures that provide flexible learning spaces and educational technologies. These challenges constitute barriers to 21st century learning (Onyango & Mhagama, 2022). In the case of South Africa as a developing country, learners in most secondary schools that are located in rural communities with multiple deprivations (Dube, 2020; Maringe, Masirine & Nkambule, 2015) are unwittingly, deprived of the opportunity to begin developing the required 21st century critical skills in schools.

The main problem that deprives learners of the 21st century learning opportunities in rural secondary schools is attributed primarily, to the inability of school leaders to be proactive and take initiatives toward creating learning spaces that best support 21st century learning for learners. This leadership deficit mentioned in the paragraph above may prompt the enactment of policy framework to provide the necessary resources and relevant teacher professional development opportunities. The required critical skills for global knowledge, intensive economies of the 21st

century and beyond include, but not limited to collaboration, communication, creativity, critical thinking and problem solving (Campbell, 2020). Ultimately, the consequences are dire for current and future learners, as they will be left behind from their expected active and meaningful participation in the 21st century global economies (Du Toit-Brits, 2019; Van Laar, et al. 2020). Moreover, the repercussion will be a perpetual cycle of multiple deprivations because learners from rural secondary schools will not be able to extricate themselves and their families from complex and unfavourable rural learning and living conditions.

Schools in rural areas, especially in secondary schools, grapple with multiple challenges that include poor infrastructure, lack of resources and the lack of access to computers (West & Meier, 2020). There are also less funding opportunities, and communities are of low socio-economic status (Jaarsveld & Van der Walt, 2018), and they experience poor internet connectivity (Mukuna & Aloka, 2020). In addition to the above, they endure unreliable electricity power supply challenges and face the phenomenon of under-qualified teachers, especially in critical subject such as Mathematics, Science and Technology. The notion of teacher resistance to change, tensions among the teachers and between the teachers and the learners (Bradbeer's (2021), as well as teacher professional development, all conspire to become significant contributors that hinder the creation of learning spaces that best support 21st century learning for learners. In the light of the challenges that rural secondary schools face, school leaders need to reconsider different proposals and employ multiplicity of strategies in order to navigate these challenges. Indeed, both teacher agency (Biesta, Priestly & Robinson, 2015; Imants & Van der Wal, 2019) and learner agency (McGregor & Frodsham, 2022) can be demonstrated from the success in creativity and innovations that can be recognisable. According to Manyukhina and Wyse (2019), agency can be conceived as an individuals' belief in their ability to act independently to make one's own choices which is essential for success.

### 1.4 Rationale and purpose of the study

The underlying principles that inspired me to conduct this inquiry span from my personal experience, professional observations, and theoretical dimension. I was born in a rural area; I received primary school education in the mid-1970s and secondary school education in the 1980s. I then completed what was called Standard 10 (now Grade 12) in a township school because there were few secondary schools that provided opportunities for Grade 12 in our area. The pre-tertiary education system and classrooms were engineered to foster teacher-centric teaching and learning

with the expectation of learners mastering the subject content knowledge only. The seating arrangements were standardised rows facing the front of the classroom where the chalkboard is positioned and the teachers spent most of the time talking during lessons. I also recall that the only source of information was the teacher carrying a textbook, telling us to memorise and recite what was in the textbook without any attempt as conceptualising the content.

As I now reflect on the period post-secondary education, I still have unanswered questions about the skills that I developed and I wonder as to what, when and how I was provided with opportunities to develop them in order to mitigate the plethora of contextual challenges of rurality that we faced at that time. These questions initially came into my mind during my post-secondary education when I studied at a technical college pursuing a mechanical engineering qualification, concurrently as an apprentice for a period of four years. I realised that most of the skills that I developed during this period would have been initially introduced at a level of secondary school education. The basic skills include collaboration, creativity and problem solving to mention a few. With teacher-centric teaching practices, I then realised that, at the time that I was a learner in rural settings, I was also deprived of the opportunities to develop critical skills in the learning process. To date, most learners in rural schools are experiencing similar challenges of face-to-face teacher-centric pedagogies (Mafenya, 2021) in traditional four-wall content-based classrooms **(**Mahaye, 2020; Omodam & Addam, 2022). In some ways, one may argue that very little has changed in the past 40 years in rural secondary schools.

Despite attributive challenges emanating from complex rural constraints (Dube, 2020; Du Plessis & Mestry, 2019; Jaarsveld & Van der Walt, 2018; West & Meier, 2020), in certain instances, learning spaces are unexpectedly, successfully created. My considerable experience of 22 years teaching in rural secondary schools has made me understand the constraints and complexities of rural teaching and learning environment. Having this knowledge, I then developed an attitude that says that there are less prospects of any successful transformation of any kind for which attempts can be made in a rural setting. However, contrary to my strongly held assumptions, I was later alerted to the existence of two rural secondary schools that are highly spoken about regarding their success in creating learning spaces for the 21st century learning for learners. This was my source of inspiration to conduct a study in order to examine how the school leaders and teachers have achieved this feat when the same rural contextual factors that affect other schools exist alongside the school's achievement.

I also reflected on the period when I was receiving training as a professional teacher at the university after my artisanship certificate from a post-secondary institution. I then realised that the focus was on how I can best teach learners to master subject content and how to assess content knowledge that they had acquired. Unfortunately, with the constraints emanating from scarce educational resources, I am still organising learners into groups when I engage them in doing classroom activities. Initially, this approach was one of many strategies of ensuring that my lessons are a success in overcrowded classrooms. Although there are challenges of floor space and the type of furniture that is used, I always ask learners to re-arranged and organised desks into groups prior to the commencement of my lesson presentation. Notably, in the preceding and succeeding lessons, the desks are always re-arranged by other teachers to be in standard rows facing the chalkboard because my colleagues are continuing with outdated traditional teacher-centric pedagogies.

I have learned that my initiative to enable learners work in groups and my role as a facilitator of learning process have changed the learning environment from a period of five years now. Remarkably, all learners are inspired to do their class activities with no sleepiness and the achievement of learners' academic performance has improved drastically. This kind of new behavioural approach prompted me to do this study, to also explore innovative strategies that school leaders from other secondary schools in similar rural settings use, as well as their creativity in using traditional classrooms as learning spaces that support learner-centric pedagogies.

The vast amount of information that I have gained from literature regarding learning spaces and the contemporary approaches to teaching and learning is from extensive reading of relevant literature as a theoretical dimension that has also been my source of inspiration to conduct this study. As a person who has obtained a Master of Education degree in Educational Leadership, Management and Policy Discipline, I have been exposed to literature with multiplicity of conceptualising learning spaces as a phenomenon. I have also learnt that learning spaces, technology and pedagogical practices of the 21$^{st}$ century learning, are inextricably, intertwined (Wilson & Randall, 2010). With that in-depth and rich information at hand, I have been trying to find studies from literature that interlink the tripartite concept of learning spaces, technology and pedagogies to secondary schools in the context of rurality. I sought to understand this intricate intertwinement being aware of the complexities surrounding the concept of rurality as it lacks homogeneous definition. Scholars such as Myende (2012) and Hlalele (2012) argue that rurality has as many definitions as there are scholars that try defining it (Hlalele, 2012). I have noted from

other studies that in South Africa, deprived rural schools do not have all the necessary and sufficient resources to function (Chikoko, 2018; Msila & Netshitangani, 2016). However, Myende and Chikoko (2014) aver that there are many relevant resources in rural contexts that remain untapped. With all this information from different scholars at hand, it became a stimulant for me to conduct this study in the context of rurality with respect to South Africa. I used two rural secondary schools as my research sites in order to generate data.

### 1.5 Significance of the study

It is imperative that this section demonstrates the possible contribution of this study to various stakeholders in education. The study sought to contribute to the generation of knowledge which attempts to bring about insights that will benefit various stakeholders about successful school leadership practices when the impact of complex rural conditions is at play. There are seven categories of stakeholders who may benefit from this study. The categories are in the form of School Managers (Principals, Deputy-Principals & Departmental Heads), teachers and the Superintendent of Education Managements (SEMs).

#### 1.5.1 Significance for the School Managers

The study may provide insights to school managers' responsibilities that go to the extent of embracing emerging ideas, innovations and creativity from ordinary teachers that will make the schools to become relevant to the current demands of 21$^{st}$ century learning. Sensibly, school managers may be provided with profound understanding that school leadership in rural settings employ amalgamated leadership practices (Bolden, 2011), deemed possible for the school leaders to achieve broader educational objectives. In multiply derived school contexts, this study will be eminent in fighting against the notion of "one-size-fits-all" of leadership knowledge domain and practices. School leaders need more interactions and engagements with teachers as practitioners (Bolden, 2011).

The incumbents may learn to unlearn the notion of general understanding that they have all the expertise to change the fortunes of the school. Hence, leadership is neither an exclusive responsibility of incumbents in formal leadership positions (Harris & Spillane, 2008), nor a position of formal power (Bastardoz & Day, 2022) and authority (Harris, 2004). The study may provide School Managers with a new conceptualisation of school leadership as a form of

collaborative practice with teachers' initiatives that lead to successful school development (Heck & Hallinger, 2009). School managers may understand that teachers need their support and should be provided with the necessary resources for a good cause rather than imposing the ideas of school development that they were not initially involved in. In turn, this undertaking that can emerge from this study, hopefully, would make a profound contribution to addressing the interplay of complex rural contextual factors and leadership practices toward contemporary endeavours of 21st century learning. The findings and discussions may provide school managers with opportunities in rural secondary schools to self-reflect and give insights on preparations for best practices in rural settings. This study may also serve as a significant contributor in averting the marginalisation of learners because of the negative impact caused by the complex rural contexts that are beyond their control.

### 1.5.2 Significance for the teachers

The study may provide teachers with more opportunities to explore a variety of creativity and innovative ways in initiating changes that meet the necessary requirements for a competitive environment (Mokhber, Ismail & Vakilbashi, 2011). It is the contribution of the study that the teachers may strongly have an understanding that it is insufficient to focus on School Managers' actions in order to take initiatives for the anticipated transformation in an education sector. They can draw inspiration in the new insights that not in formal positions and processes matter the most (Hanna, Smith, Kirkman & Griffin, 2021). Teachers may understand that the knowledge and expertise that they have acquired in their profession may be of significance, valued and can be considerably embracive by School Managers for schools to thrive. The study may bring insights to the teachers to understand that school leadership activities may also be the responsibility of an ordinary teacher not in formal leadership position in a school. The success in their endeavours may be embedded in the consistency of collaboration and cooperation among the passionate teachers and between the teachers and the School Managers. Teachers may be inspired by the findings and recommendations from this study to expand their horizon to address other critical issues that rural secondary schools grapple with.

### 1.5.3 Significance of the study for the Superintendent of Education Management

The study may give insights to Superintendent of Education Management (SEM) in terms of understanding that the world and society continue to develop and therefore, things in the 21st

century should not be expected to be done the old way as they were during the past centuries (Yahaya, 2022). In fact, rural schools survive with scarce resources for them to be relatively functional (Chikoko, 2018; Msila, 2016). With this kind of information at hand about rural secondary schools in particular, the injection of more financial, material and human resources may be given a priority with the realisation that transformation of any kind in rural setting would be relatively successful.

The SEMs may be keen to be proactive and go an extra mile to support rural schools under their jurisdiction by ensuring that the provision of resources and teacher development programmes are expedited. Presumably, this behaviour could be informed by the general understanding that rural schools in particular, are now relying on their human capital that is a fundamental driver for transformation (Adams-Kane & Lim, 2014; Rodrik, Subramanian & Trebbi, 2004).

### 1.6 Research/Critical questions

- What does school leadership in rural secondary schools understand learning spaces for the 21st century learning for learners to be?
- What does school leadership in rural secondary schools do in creating learning spaces for 21st century learning for learners?
- What are the challenges encountered by school leadership in rural secondary schools in the creation of learning spaces for 21st century learning?
- How does school leadership in rural secondary schools addresses the challenges encountered in the creation of learning spaces for 21st century learning?

### 1.7 Clarification of key concepts

This study is premised on key concepts, namely learning spaces, 21st century learning, rurality, rural schools, schooling in rural schools and school leadership. These key concepts are discussed next.

### 1.7.1 Conceptualising a learning space

Learning space as a concept that emanates from two terms that need to be elaborated on in order to give effect of what a learning space entails. Learning is "an identification process about something that can give an understanding of knowledge and experience either formally or informally" (Ismail & Abdullah, 2018, p. 366). It is a process of creating knowledge through the transformation of experience that is responsive to contextual demands (Kolb & Kolb, 2011). Bomsdorf (2005) defines learning as a mental or cognitive process that can be observed by the change in a learner's behaviour caused by the learning process.

Learning on one the hand, can be understood in different ways and, so is the space where learning takes place on the basis of the prevailing contexts. According to Boddington and Boys (2011), learning is always embodied in material space, individual, social, economic, and cultural contexts. Ambrose, Bridges, DiPietro, Lovett and Norman (2010) define learning as a process that leads to change, which occurs because of experience and increases the potential for improved performance and future learning. Emerging from these definitions are the critical components of learning as a cognitive process that can be observed through individual's change in the behaviour, attitude and knowledge that is responsive to contexts.

Space on the other hand, can be regarded as a generic term that denotes a platform where people can interact (Sköld, 2012). A space for learning is defined as a space that supports multiple and diverse teaching and learning, as well as pedagogies. It includes technologies that encourage social participation, providing healthy, comfortable, safe, secure, and stimulating setting for its occupants (OECD, 2006). In this regard, a learning space supports learning that takes place everywhere at any time (Oblinger, 2006) when all the affordances are available and accessible. The conceptualisation of a learning space therefore, tells us that a learning space extends beyond the teacher and the classroom. In this case, a learning space requires norms of psychological safety and seriousness to learning to be actualised (Kolb & Kolb, 2008). In a widest sense, formal and informal learning can take place inside and outside of schools because of the learning space. In essence, a formal learning space has an influence from the teachers' learner-centric pedagogical practices. Therefore, a informal learning space is organised and occupied by learners alone when the affordances are in place.

### 1.7.2 Conceptualising the 21st century learning

Twenty first century learning is a learner-centric and constructively aligned learning (Frache, Nistazakis & Tombras, 2017). The fundamental constructs are attributed to a rapidly increasing integration of technology that influences how people think, interact and learn (Dakhi, Jama, Irfan, Ambiyar & Ishak, 2020). A powerful integration of technology into the learning process has developed an environment of learner self-directed learning on the part of the learners (Yulianto, Pramudya & Slamer, 2019). Similarly, such a learning framework enables teachers to use their knowledge of subject matter, learning and technology in advancing their learners' learning experiences. The role of the teacher is that of being the facilitator of the learning process (Bruggeman, Hidding, Struyven, Pynoo, Garone & Tondeur, 2022). Furthermore, 21st century learning is characterised by a variety of systematically idealised learning designs that enhance learners to achieve broader learning objectives of the 21st century. The designs include blended learning (Dakhi, Jama, Irfan, Ambiyah & Ishak, 2020), hybrid (Ismail & Abdulla, 2019), flipped (Karnawati & Istianingrum, 2020) and online learning (Szopiński & Bachnik, 2022). These learning frameworks according to Yulianto, Pramudya and Slamet (2019), provide learners with opportunities of developing the 21st century competences that enable them to compete in the 21st century era.

The measure of the efficacy of 21st century learning is characterised by the improvement of quality of capabilities of learners in developing competence in the learning process. The competences include mostly creative thinking, communication critical thinking, collaboration and innovation (Kandari & Al Qattan, 2020; Sumardi, Rohman & Wahyudiati, 2020). Creative thinking is understood as the use of a wide range of thinking, a creation technique to create worthwhile ideas (Munandar, 2009). In this discourse, analysing, refining and evaluating ideas are done in order to maximise creative efforts, thus, providing a variety of possible solutions to a problem (NEA, 2012; Yulianto, Pramudya & Slamet, 2019**).** Communication refers to articulating ideas by using either oral, written or non-verbal means in various forms and contexts (NEA, 2012). Twenty first century includes the ability to use digital media effectively to collaborate with others (Watson, & Pecchioni, 2011).

Critical thinking definitions vary, but can generally, be understood as the capability to reason effectively, use systems thinking, make judgements and decisions to solve problems (Adam, 2015; Foliman, 1991). Collaboration is the ability to work effectively with others by exercising

willingness and flexibility when necessary, towards a common goal (NEA, 2012). Twenty first century learning is a multimodal practice that is either technology mediated or other multiple expressive forms of learning without using technology that can also be optional in developing the 21st century skills discussed above (Mirra & Garcia, 2020). However, the idea that 21st century learning prepares learners for life in a globally connected society, digital technologies give learners affordances to continue learning within and beyond classroom contexts.

### 1.7.3 Conceptualising rurality

The definition of rurality is dependent on a number of factors to distinguish it from urban areas such as distance to city centre, geographic and demographic aspects (Halsall, 1973; Msila, 2010). It is referred to as traditional areas and farms with population density having poor infrastructure and economic activities (Department of Basic Education, 2017), relatively underdeveloped with high levels of poverty and unemployment (Du Plessis & Mestry, 2019; Fleisch, 2008; Msila, 2010). Different scholars in South African literature refer to rural areas as generally remote places from city centres (Dube, 2020; Mgqwashu, 2019; Msila, 2010) and relatively, underdeveloped with high levels of poverty and unemployment (Du Plessis & Mestry, 2019; Fleisch, 2008; Msila, 2010). Myende and Chikoko (2014) understand rurality as areas that are often characterised by socio-economic challenges limited facilities, illiteracy, disease, and poverty.

Rurality with its adverse impact in 21st century learning is understood in this study to be associated with a multiplicity and multifaceted factors that have a direct effect that hinder endeavours of providing effective teaching and learning. In fact, the predominant predicaments are the lack of basic infrastructure, the lack of economic and social viability needed for the sustainability of technological emancipation for both the teachers and the learners, unavailability of or inadequate access to electricity (Dube, 2020). Furthermore, there is also inadequacy of network connectivity with poor parents that are unable to provide their children with technology gadgets for online learning. A brief conceptualisation of rurality is the magnified chasm between the haves in affluent or urban areas and the have nots in rural settings. I must hasten to say that such conceptualisation can be misleading in that not everybody in rural areas is poor or lack basic facilities and infrastructure.

### 1.7.4 Rural schools

Rural schools in the context of South Africa are schools that are located in rural communities that are faced with multiple deprivations (Marine, Masirine & Nkambule, 2015). The confluences of indices that characterise multiple deprivations include four main dimensions, and these are employment deprivation; education deprivation, income and material deprivation and living environment deprivation (Noble, Barnes, Wright & Roberts, 2010). The multiple deprivations hinder all the initiatives of transformation, thus, placing rural schools in disadvantaged and deeply challenging contexts.

Schools in rural areas are characterised by numerous factors that define them. They are poorly resourced in terms of infrastructure (e.g., sanitation, classrooms, learning materials and technologies). Professionally qualified and best teachers do not want to work and stay in rural schools (Du Plessis & Mestry, 2019; Mestry & Ndhlovu, 2014; Mgqwashu 2019). Other factors include unstable electricity supply, security problems (Adukaite, Van Zyl, Er & Cantoni, 2017), and lack of access to information and communication technology (ICT) infrastructure that increases social isolation (Bertolini, 2019). Apparently, rural schools with the traditional teacher-centric studio-style teaching and learning practices are inevitable if such rural conditions are not addressed adequately.

### 1.7.5 Education in rural schools

The conditions in which rural schools are located pose enormous challenges that are unique to rural environment as compared to township and urban schools. Insufficient physical and human resources that educational authorities are unable to supply are some of the overarching factors that have an impact in the provision of quality education. This challenge is burdensome to rural communities, with low socio-economic status, that are unable to supplement insufficient financial and educational resources from the government-putting learners at a disadvantage (Du Plessis & Mestry, 2019). Undoubtedly, the problems mentioned above have serious repercussions for learners in rural schools by not getting access to quality education and equal educational opportunities.

Rural conditions have consequential impact on the behaviour of learners. There are high rates of learner absenteeism and dropouts because learners find it difficult to engage in education that is

provided with lower quality (Du Plessis & Mestry, 2019). This results in lower learner achievement (Taylor & Mulhall, 2001). As a result, learners in rural schools ultimately find education irrelevant to their lives (Du Plessis & Mestry, 2019) that decrease enrolment that leads to decreased funding from the government (Du Plessis, 2014). Moreover, implicit to learners' lack of interest in rural schooling is also the issue of limited scope of the curriculum and thus, limited subject choices (Monk, 2007).

Inspired teachers heighten rural schools to fill the void in pursuit of encouraging and promoting learner behaviour that would enhance learner achievement in the 21st century learning. In essence, teachers that orchestrate and demonstrate this purposeful instructional mode must be qualified teachers especially with specialised subjects training at secondary school levels. However, qualified, and experienced teachers are not willing to work and remain in rural schools. The reason is that rural conditions are not favourable to their wellbeing. These conditions enable more under-qualified teachers to be found in these schools (Du Plessis & Mestry, 2019; Monk, 2007). Moreover, there is a prevalence of teachers that teach out-of-field subjects in rural secondary schools that they are not specialised to teach (Kenny, Hobbs & Whannell, 2020).

### 1.7.6 School leadership

School leadership is defined in many ways as the concept of leadership itself is. In fact, according to Northouse (2010), leadership entails the process of influencing group of people towards organisational goal. On the same breadth, Bush, Bell and Middlewood (2010) define leadership as a process of influence that anyone without holding any leadership position may exercise for any organisation to thrive. Apparently, the definitions of leadership entail the resultant effective interactions between groups of people instead of skills attributed to a single person (Townsend, 2011). In view of these definitions of leadership, it is noteworthy to understand school leadership for the purpose of this study as the influence of group of people by anyone with an intention of achieving organisation goals. Distinctively therefore, school leadership entails teachers, not necessarily in leadership positions, as influencing others towards achieving shared objectives of the school (Bush & Glover, 2003). In that light, school leadership motivates and inspires others in pursuit of the school's vision that teachers participated in the process of its development. Drawing from the above three dimensions, one can conclude that school leadership is a fluid process of influencing others emerging from any part of the school in pursuit of achieving broader educational goals. Moreover, leadership is a function that many people in a school may perform

(Myende & Nhlumayo, 2020) despite leadership being associated with people in positions of power (Leithwood, Harris & Hopkins, 2020).

### 1.8 Demarcation of the study

A demarcation of the study provides the basis for making the study manageable in order to distinguish knowledge from mere opinion (Nickles, 2006) and, serves as social collective actions in given circumstances (Santos, Chor & Werneck, 2010). This study focused on leadership activities that underpinned the creation of learning spaces for the 21st century. It can be noted that the research was only confined to two rural secondary schools as research sites for the purpose of generation of qualitative data. School Managers and teachers of these schools are renown for successfully creating learning spaces that best support 21st century learning for learners despite the impact posed by complex rural environment. The reach was limited to the iLembe District schools because I am familiar with this rural area as I lived and worked in the locality.

### 1.9 Organisation or outline of the study

This thesis is organised into eight chapters and these chapters are summarised below.

#### Chapter One

This chapter provides the background information, introducing the vital aspects of the study. These aspects include the background, the statement of the problem, the significance of the study, the research objectives and research questions, the clarification of key concepts and the demarcation, as well as the limitation of the study.

#### Chapter Two

This chapter discusses various dimensions of the key concept of learning spaces and explores the key debates on the design principles on transitions from traditional physical layout of learning spaces to the 21st century learning spaces.

**Chapter Three**

This chapter discusses the theories that form a framework that underpins this study. Transformational leadership theory (Bass, 1985) and Instructional Leadership Theory (Hallinger & Murphy, 1985) are presented and discussed.

**Chapter Four**

The chapter discusses the research design and methodology used to generate data that was geared towards answering the research questions. The choices of selecting and using research approach, design and the paradigm are explained. The sampling of the participants, data generation and analysis methods, trustworthiness and ethical considerations are also discussed as they form key elements of the methodology chapter.

**Chapter Five**

This chapter presents data that was generated from school leadership which speak to issues of the creation of learning spaces for 21st century learning. The emerging themes and sub-themes are displayed in relation to the research questions. In substantiating data from the participants, *verbatim* quotes from the participants' perspectives are used. There is also the presentation of information that was generated from document analysis for crystallisation purposes of data from interviews.

**Chapter Six**

This chapter presents and discusses the findings from school leadership, which includes school leaders, departmental heads and teachers, as well as from document analysis that were presented in Chapter Five. The discussion of findings includes the infusion of the theoretical framework that was discussed in Chapter Three and the reviewed literature in Chapter Two. I also attempt to draw similarities and difference from data within and across both rural secondary schools. Drawing from the reviewed literature and emerging themes from semi-structured interviews, I try to elicit the relationship between learning spaces and learning environment that can be used interchangeably to show the same meaning.

**Chapter Seven**

This chapter discusses critical abstraction of new knowledge that emerged from the discussions of findings in Chapter Six of this study.

**Chapter Eight**

This chapter presents the synthesis, conclusions and recommendations based on findings from the research journey thus explored in the previous chapters. An emerging leadership theoretical model is also presented and finally, the conclusion of this chapter is presented.

## 1.10 Conclusion

In this chapter, an orientation to the study is presented to share a road map of how the study was conceptualised and unfold. I have presented the background to the study to provide a foundation upon which the study is based; this is followed by the statement of the problem. The purpose of the study, the rationale and purpose of the study is clearly articulated. Other elements of the first chapter in a thesis, such as it's the significance of the study, objectives and research questions, clarification of key concepts have been discussed. Before the conclusion is presented, an outline of the thesis is presented. The next chapter provides a detailed discussion of the literature review relating to leadership and learning spaces for the 21st century.

# CHAPTER TWO
# LANDSCAPING THE DISCOURCES ON CREATIVE AND INNOVATIONS IN LEARNING SPACES FOR THE 21ST CENTURY LEARNING FOR LEARNERS

## 2.1 Introduction

The previous chapter served as an orientation of the study which highlighted how the study came about and also how it unfolded. In this chapter, I present a critical discussion regarding the creation of learning spaces for the 21st century learning. All the issues raised are based on the relevant national, continental and international literature. Relevant information from the literature is presented under the following main headings, namely; understanding a learning space; factors to the creation of the learning spaces; challenges encountered in creating 21st century learning spaces; suggested measures in addressing the challenges and lastly, the conclusion of the chapter brings it to the end.

## 2.2 Understanding learning spaces

There is widespread acceptance of the ever-evolving teaching and learning landscape in the 21st century. As such, there is a global shift towards embracing what to learn, how and where that learning should take place. Indeed, the paradigm shift from didactics of an industrial-age, teacher-centric instructions to constructivist approaches to learning landscape requires the involvement of different stakeholders. To navigate this shift, stakeholders need to understand the importance of the interplay and correspondence between school buildings' architectural design features (Blackmore, Bateman, Loughlin, O'Mara & Aranda, 2011), pedagogies, digital technology-based educational resources and human behavioural changes (Fenwick, 2015; Fenwick & Edwards, 2011). However, it is prudent and ideal to delve deeper into a learning space as a phenomenon and how it emerged according to scholarly work in order to understand what it entails.

The concept of a learning space builds on the field theory of learning enacted by Kurt Lewin (1890-1947). Lewin introduced a concept of life space where a person and environment are seen as interdependent variables. This is where a person and environment interact, and as a result of that interaction, a particular behaviour emerges. He (Lewin) argues that a particular behaviour is a function of the total physical and social situation. Thus, a human behaviour changes because each person exists within a field of forces that continues to change; hence, the major changes from

the 20th to the 21st century due to global demands. In essence, the individual continues to respond to the emerging aspects of the situation at a given time and space. Therefore, in this regard, it must be noted that there are different approaches in understanding learning spaces as there is plethora of scholars who focus on this phenomenon.

The understanding of a learning space differs considerably between countries, societies and cultures. These differences tend to be a defining feature of economic, social, cultural and political structures. According to Ostendorf and Permpoonwiwat (2017), a learning space is understood differently in Europe and in Asia. Similarly, the significance of these differences is underscored by different contexts within social situations, economies and spatial theories in other countries. Therefore, I will be discussing the understanding of learning spaces for the 21st century learning at global perspectives by drawing from the wide scholarly work from different perspectives. I will provide discussions about understandings of learning spaces, ranging from a practical level to a broad theoretical and philosophical level, which is naturally, complex. Each level provides a relevant engagement in understanding the use and application of learning spaces. It provides some lenses that view and understand the use of learning spaces in supporting a variety of 21st century learning modalities.

It is critical to note that a learning space or learning spaces cannot be understood in isolation from the learning modalities that are designed and created to support them. With that been said, I therefore begin by bringing to the fore an overview of different learning modalities for the 21st century and a brief description of what each of these learning modalities actually entail. Learning modalities can either be mobile (m-learning), flexible, blended and hybrid learning to mention a few. Mobile learning refers to the use of mobile devices and services including smart phones, tablets and mobile instant messages services for educational use outside the classroom environment as an informal learning (Crompton, 2013). Flexible learning is where furniture sometimes can be re-arranged for each learning activity to take place (Neill & Etheridge, 2008). The intention is to accommodate different approaches to teaching and learning. Blended learning is the fusion of online and face-to-face contact of learners and teachers (He & Zhao, 2020; UNESCO, 2016). On a continuum, hybrid learning entails learners located in different spatial spaces simultaneously engaging with other group of learners and the teacher through advanced technologies and internet connectivity (Tuomi-Gröhn, 2007; Zitter & Hoeve, 2012). Evidence seems to suggest that any 21st century learning modality takes place where a learning space has or learning spaces have been designed and created specifically to support it.

### 2.2.1 Practical level

Learning spaces can be better understood in tandem with an understanding of how learning takes place apart from learning modalities they are geared to support (Zainuddin & Idrus, 2018). The learning process can either be teacher-directed, 20th century factory model in a formal educational set-up such as a school or, conversely, learner-centric formal or informal settings (Du Plessis, 2016; Sakata, Bremner & Cameron, 2022). Central to a variety of contemporary learning spaces, is the need for teacher professional development and the provision of necessary resources that are critical (González-Pérez & Remírez-Monyoya, 2022). If it is teacher-directed, it is reasonably certain that there is more work for School Managers to inspire and motivate teachers to focus on pedagogical practices that promote learner-centric learning of the 21st century (Martinez, 2022).

Twenty first century learning puts emphasis on learners developing the necessary skills for the 21st century global knowledge economy (Juanda, 2022). In that light, one of the significant aspects of learning spaces is that of promoting a learner who engages in an active process of collaborative learning with others when the relevant resources are readily available and accessible (Meter & Stevens, 2000; Vygotsky, 1998). Zeivots and Schuck (2018) subscribe to this view. They aver that it is of pivotal importance to maintain good relationships between learners and teachers and a shared responsibility for learning amongst them. In so doing, there are benefits to this effect. Presumably, the benefits relate to learning spaces that promote and develop learner independence, that in turn, enables effective social interactions, which is the essence of the 21st century learning (Wilson & Cotgrave, 2020). It is therefore, on these grounds that learning spaces for the 21st century could be better understood.

Social interaction, as a new approach to learning in the 21st century takes place in physical as well as in virtual dimensions of learning spaces. Physical learning spaces can be understood and conceptualised relative to the influence they have on teaching and learning. For instance, indoor learning spaces are said to be flexible for a variety of spatial layouts (Kokko & Hirsto, 2020). Physical learning spaces are spaces that facilitate ongoing learning and may not necessarily be within a school building (Savin-Baden, 2007). This is congruous with an understanding expressed by Thomas (2010) when alluding to physical learning spaces as spaces that can also be outside of classrooms but, provide opportunities for cultivating teaching and learning.

Expanding on this view, Thomas (2010) argues that learning can be extended not only outside the classrooms but also that learning can be outside of physical spaces of schools. Learning in physical spaces outside the premises of the school can be spontaneous, with no periods attached and most probably, without any influence or control by either the teacher or the school. Drawing from the literature, learning can take place anywhere and at any time. Brown and Lippincott (2003) concur with this understanding, but they refer to learning environment as consisting of pedagogy, technology and physical space. I argue that not all learning occurring outside the physical school spaces involve pedagogies. Self-directed learning can take place in a physical space that supports learning outside of the school premises. Therefore, physical learning spaces should be spatially configured to provide safety, a sense of peace, basic needs for self-directed learning to take place (Brown & Lippincott, 2003).

Self-directed learning can be understood and categorised as informal learning that takes place in informal learning spaces. According to Ocaña, Mejía, Larrea, Analuisa and Freire (2021), as well as the UNESCO (2005), informal learning spaces are incidental, unplanned, occurring on-a-fly, anywhere anytime. This leads to Berman (2020) arguing about the absence of definitive measures to distinguish between contributory factors that are informal from those that are formal learning spaces. Perceptions cannot be dismissed that any learning that takes place in an informal learning space remains informal and cannot be used as part of learner progression to the next grade. In addition, Boys (2011) argues that there is a wide creation of false impressions that informal learning spaces are full of fun, novel, and enjoyable spaces in contrast to formal learning spaces' portrayal as dull and boring, with un-engaging experiences. It appears from literature that learning in informal learning spaces seems to not add any value to formal learning. This is an indication that some scholars still hold a belief that learning can only take place in formal learning spaces such as in schools that are organised by educational authorities. They fail to acknowledge the impact of exposure of learners to the advanced digital technologies that enable them to access information everywhere at any time.

Various innovations have been explored for the fusion of formal and informal learning spaces. The blurring of formal and informal learning spaces is characterised by affordances that are non-institutional technology based (Hall, 2009). Holloway, Kenna, Linehan, O'Oconnor, Bradley, O'Mahony and Pinkam (2021) are of a view that the use of emergent mobile technologies has become an interface between formal and informal learning spaces. Prensky (2001) argues that the arrival and rapid dissemination of digital technologies makes it possible for collaborative online

learning. In light of the above, global expansion of communities of practice thrives in using teaching strategies that incorporate informal learning that is learner self-directed. Collaboration between teachers and learners and among learners improves when teachers switch to multiple learning tasks and pedagogical practices (Bellibaş, Polatcan & Kilinç, 2022). Thus, providing interactive learning spaces and the use of mobile digital technologies such as smartphones in a formal learning space, reduces the gap between formal and informal learning outside of educational settings. Through novel ways of teaching and learning, the reduction of socio-cultural boundaries between teachers and learners will assist in developing trust between spaces' users. Learners will therefore, develop an attitude to transcend learning experiences from formal learning spaces to informal learning spaces. Ultimately, learners will develop an understanding that boundaries between formal and informal learning spaces are blurred. In this regard, an informal learning space is the continuation of formal learning from a formal learning space (Pöntinen, Dillon & Väisänen, 2017). In respect of learners having this understanding of the relationship between formal and informal learning spaces, they are thus, in a position to organise informal learning spaces and activities as the continuation of learning from formal educational set-up.

It is critical for School Managers and teachers to understand formal learning set-up from the perspective of a 'factory style' traditional set-up designed for the previous 20th century. Formal learning spaces for the 20th century was designed to support passive learning, teacher-centric learning typified by standard classroom model (Borges, 2013; Brown, 2002; Neil & Etheridge, 2008). This kind of understanding tends to be a yardstick against which the general understanding of learning spaces for 21st century learning from a learner-centric perspective will be well articulated. As a result, learning spaces seem to be understood by the ways in which it is designed and used; hence, this study focuses on creating learning spaces for 21st century learning.

A general understanding of formal learning spaces is underscored by the 21st century learning that is embedded within is the 21st century skills development. The exclusion of aspects such as the 21st century learning and relevant skills development, their understanding and the fundamental relationships between them causes a conflicting understanding of the difference between learning spaces and the traditional classroom. According to Leijon, Nordmo, Tieva and Troelsen (2022), the relationship between these variables is a sort of entanglement and assemblage that must be understood in relation to each other. Learning spaces can be traditional classrooms in which teachers can use innovative pedagogies that enable learners to be active and take responsibility of control over their learning (Sasson & Oria, 2021). Byers, Hartnell-Young and Imms (2016) argue

that different spatial configurations are perceived to be effective because of affordances of integrating digital technologies into teaching and learning. Given the nature of learning spaces that emerge from spatial configuration of traditional classrooms, Lippman (2010) argues that there is a potential of misalignment between the nature of traditional classroom set-up and the affordances of integrated digital technologies. With that said, it can be suggested that it is not sufficient to understand learning spaces as having spatial configuration and the affordances of digital technologies; what should be borne in mind is how learning spaces are used, and that becomes critical.

The present-day classrooms are still the dominant formal learning spaces with structural designs that are based on pre-determined learning agenda. Eventually, classroom are identified as just one example of the physical learning space (Psyché, Daniel & Bourdeau, 2020) that influences how teaching and learning should take place (Borges, 2013; Miller, Shapiro & Hilding-Hamann, 2008; Thomas, 2010). Naude and Meier (2019) agree with this finding and further expand the notion expressed above by stating that learning spaces also influence the quality of teaching and learning. On the same breadth, Sawers et al. (2016) argue that it is a learning space that determines the prevailing teaching and learning approaches. On these grounds, it is equally important that School Managers develop teachers professionally so that they are able to adopt preferred and shared framework of learning spaces to be created. Obviously, the evidence seems to re-affirm that a learning space is understood relative to the learning modality for which it was initially designed to support.

Different designs of learning spaces do not necessarily become a determinant of the type of learning modality that it is meant to support. For instance, Campbell, Saltmarsh, Chapman and Drew (2013), as well as Mulcahy, Cleveland and Aberton (2015) argue that a learning space itself does not always cause a paradigm shift with respect to the pedagogies. In some instances, the changing nature of relationships between learners and learners and teachers affords them opportunities to reconfigure their teaching and learning trajectories. Notably, the re-conceptualisation of teaching and learning results allow for the flexibility of using the space to adopt learner-centric learning (Mei & May, 2018; Page & Garrad, 2021). The evidence suggests that both teachers and learners can explain a learning space on the basis of the traditions of teaching and learning activities that have been reconfigured.

Teaching and learning at some stage can shape a learning space. According to Oblinger (2006), a learning space is shaped by learning. Indeed, a general understanding that a learning space design has a potential to inform pedagogical practices, the contrary is also true. Since multimodal activities, for an example, in hybrid learning spaces evolve, the emergence of re-designed spaces for hybrid learning comes into play (Goodyear, 2020). One of the reasons of this potential of learning shaping the learning spaces is a limitation from the initial learning space designs to accommodate different modes of learning that continually evolve. At times, it becomes strenuous to adapt to new approaches to teaching and learning to the learning space that was not initially designed as a future learning space. Evidence seems to suggest that the understanding of a learning space, either physical or virtual, depends on the current teaching and learning activities. This therefore, is an illustration that a learning space and how teaching and learning takes place within are two dimensions that are reciprocally related.

A physical learning space in a form of a standardised 'traditional' classroom, without the infusion of advanced technologies, depict a high probability of existing one-way, linear flow content transmission of knowledge through didactic pedagogies. This is contrary to learning spaces that support the 21st century learning that should act as conduit that enables the confluence of digital technologies and contemporary pedagogies (Brantner, Rodríguez-Amat & Belinskaya, 2021). The existing historically designed and built architectural classrooms for the 20th learning in many developing countries can be re-configured and transformed to support 21st century learning. They may well acquire the same status as newly designed and built schools with relevant and much needed resources as equitable learning spaces that fully support the 21st century learning. Evidence seems to suggest that 'traditional' classrooms that are configured with all the necessary affordances for the 21st century learning can acquire similar status as new architectural designed built physical spaces for the same purpose.

A corpus of studies amid advanced digital technology integration in education has laid the basis for virtual learning spaces to become one of the emerging areas of focus. This is a space outside the formal classrooms and highly digital with access to stable internet that enables social interaction to continue (Dillenbourg, 2000; Graetz, 2006; Zeivots & Schuck, 2018). This space is spontaneous, deliberate (Brown, 2006) and supports informal types of learning (Qazza, 2021). This virtual learning space tends to interlink informal learning spaces such as home and formal learning spaces. Formal learning spaces include classrooms and lecture halls. The discussion about emerging virtual learning spaces seem to give value to informal learning. Moreover, there is a

tendency of blurring boundaries between formal and informal learning spaces given the effect by virtual learning and effective use of digital technologies. Overall, the literature seems to suggest that learning spaces can be understood on the grounds of social interactions occurring in different spaces with boundaries blurred by advanced technology integration into learning.

### 2.2.2 Theoretical level

To promote a shared discourse around a common understanding of learning spaces for 21st century learning, it is important to bring to the fore a theoretical perspectives that underpins information revolution on the contemporary ways of how people in general learn. Perhaps, it is necessary to foreground different understandings of learning spaces by pointing out the significance of social constructivist theorists on learning *per se*. They seem to share the crux of other theoretical perspectives pertaining to the understanding of learning spaces. Constructivist theorists advocate that learning is a process of self-discovery practice (Matthews, Andrew & Adams, 2011). Constructivist theorists (Vygotsky, 1934; Dewey, 1956) suggest that learners learn through contextual experiences, interpret information, assimilate, and reflect on new knowledge. Similarly, Kurt (2021) is in support of the same entrenched model of learning that underscores new ways of how people learn. This, thus, provides evidence that social constructivism is but one of the lenses that seem to form the bases of how learning spaces for the 21st century can be understood.

Social constructivism puts emphasis on the importance of the context and the cultural aspects of people in understanding how the 21st century learning should take place. Generally, learning spaces will be understood with the intention to support the meanings that people have about how learning occurs. The assumption from social constructivism's perspective, is the belief that learning is an individual activity (Kukla, 2000), and that it is socially and culturally embedded (Ernest, 1999; Gredler, 1997). McMahon (1991) argues that meaningful learning occurs when learners are engaged in social interactive activities. In view of these assumptions about learning, there seems to be a conflict. In fact, they complement each other; hence, they are based on the same school of thought. Therefore, it is upon this reality that learning spaces have to be understood. Hence, they are designed and created in order to support different learning modes, based on social constructivist perspectives. Overall, the literature seems to suggest that the understanding of learning spaces may be perceived to differ as a result of the lenses that are context

and culturally embedded that different people find themselves in. A good example to this effect is the different meanings of a hybrid learning spaces that have been discussed above.

Although learning may be referred to as a self-discovery practice, to a certain extent, tapping on other theoretical perspectives is necessary for learning spaces to be effective and therefore, better understood. A social-situational learning theory (Merriam & Caffarella, 1991; Smith, 1991), then comes into play that stresses social interaction in a learning space. Social-situational learning theory puts emphasis on the impact of social influences on learner's learning process. Social influences, for an example, take place when a learner observes and interacts with others in a social setting and physical features specifically in that space (Greeno, Smith & Moore, 1993). Wilson and Cotgrave (2020) contend that specific preferences of learners or group of learners must be taken into cognisance if learning spaces would enable social interaction to manifest. Preferences may include the types of learning resources, the physical environment and the experiences of learners around them. It is in this regard that learning spaces can then be understood on the bases of preferences from social actors within. Moreover, an understanding may be on different ways of how learners learn when impacted upon by the surrounding physical features. It is not uncommon that different set-ups of the learning spaces emerge because in general, there are multiple realities that exist about the nature of learning spaces as they are about the external world (Crotty, 1998).

Moreover, it can be noted that social learning theories provide a framework for understanding learning spaces that foster learners to develop 21$^{st}$ century skills, such as collaboration and communication to mention a few of them. The implications are that learning spaces can be understood with the end in mind of what school leaders would want to achieve and the processes involved. In essence, the literature seems to suggest that the interplay of social constructivism and social-situational learning theoretical frameworks provide lenses that tend to impose meanings of what learning spaces should entail.

It is worth noting that despite the influence of social learning and social-situated learning theories in a learning space, learning does not only take place in social contexts, and therefore, does not account for all types of learning spaces and modalities. Some scholars (Akinsanmi, 2008; Guney & Al, 2012) argue that learning is much more meaningful if learners are given opportunities to learn on their own rather than from teachers' instructions and social interactions. Most importantly, if learning is considered as a cognitive process for once, it can be conceived primary as a change in behaviours when learning spaces act as a learning stimulus. Drawing from this

discussion, the literature seems to suggest that apart from the impact of theoretical perspectives on learning, learning spaces can be understood on the bases of learner's preferred mode of learning.

The consideration of cognitive processes of learning (either a teacher or a learner), may provide a standpoint on appropriate learning spaces that are informed by cognitive learning theories. The cognitive learning theory is concerned about how learners learn in a given space (Bruner, 1975). According to Bruner's (1975) cognitive theory of learning, learners learn actively through discovery learning process, an embodiment of learner-centred learning. Tregubova and Ainoutdinova (2021) argue that cognitive theory of learning is concerned with learners being engaged in active learning that enables learners to apply knowledge in new situations within a given contexts. Seemingly, a understanding of learning spaces is limited by the preferred learning mode, underpinned by a theoretical framework and the context in which learning occurs. Overall, evidence seems to suggest that a preferred learning process that is informed by a limited theoretical framework and the context, limits a variety of learning spaces that school leadership may pursue and promote.

A cognitive process of learning gives effect to learner's behavioural change with all the learning affordances being made available and accessible in a given space. Emerging in this regard is the behavioural learning theory advocated by Skinner (1953). It relates to a belief that learning is being provided by a change in learner's actions when exposed to immediate physical conditions and social contexts. This implies that the behaviour of learners is influenced by a particular learning space design and equally important, is how a space is organised. A learning space can therefore, be better understood by observing behavioural aspects of the learner, inclusive of the teacher more than the affordances being put in that space. The evidence seems to suggest that a learning space is understood by also taking into cognisance the behavioural aspects of learning space users despite all the affordances being put in place.

The different ways of learners' behaviour in a learning space is a determinant of how learning takes place. This is informed by the constructivist view of learning that spells out the contemporary learning approach where a learner learns by constructing knowledge when all the affordances are put in place. This constructive view of learning is underpinned by the constructive learning theory. Constructivist learning theory as enunciated by scholars that include Dewey (1879), Piaget (1951) and Vygotsky (1978) is a mental construct that holds that learners learn new information building

on their current understanding and expertise. The epistemological belief by these theorists is that learners learn by constructing their own knowledge. Obviously one can deduce that learning is an active process whereby, learners do not come into educational formal or informal set-up without pre-existing levels of knowledge and understanding. The emphasis is that a learning space can be defined by focusing on specific purposes for which the space was designed. Overall, the literature seems to suggest that a learning space can be understood on the bases of belief systems of learning. This can therefore, be regarded as a determining factor for their designed, creation and ultimately the ways in which they are used. In this regard, a learning space is understood by the ways that are attributed to their use and learning underpinned by a plethora of theoretical undertones.

### 2.2.3 Philosophical level

An understanding of a learning space is also premised on the multiplicity of philosophies in the education landscape. It is worth noting that the significance of a teaching philosophy has a direct impact on understanding how and where learning takes place. This kind of an impact implies that a teaching philosophy is core to how learning should take place thus, resulting in spatial configuration of a learning space that can be created. For example, a teaching philosophy that centres on teacher-dominated teaching and learning approach is linked to a traditional classroom (Bradbeer, Mahat, Byers, Cleveland, Kvan & Imms, 2017) of the 20$^{th}$ century learning. On the contrary, a teaching philosophy that puts a learner at the centre promotes learner-centric teaching practices. The latter of the two teaching philosophies is the crux that underpins learning spaces for 21$^{st}$ century learning in this study. Brown and Lippincolt (2003); Oblinger (2006) argue that 21$^{st}$ century learning takes place everywhere anytime when all the necessary teaching and learning affordances are available and accessible. Learning spaces affordances include purposeful furniture and technology. Evidence from literature seems to suggest that the dichotomy of teaching philosophies may inform the way of how school leadership and teachers understand about a classroom and learning space. It can be noted that these standpoints have some underlying implications to the school leadership and teachers alike.

The implications of teaching philosophies to school leadership and teachers is that of relying on their background knowledge of current teaching philosophies to make informed decisions towards creating learning spaces. In view of all the above, it is undoubtedly envisaged that school leadership will have a direct influence on the teachers and the learners' adaptive behavioural changes. School leadership can then plan, organise and create learner-centric learning spaces

underpinned by a learner-centric teaching philosophy. Notwithstanding this, Sawers, Wicks, Mvududu, Seeley and Copeland (2016) argue that this philosophical underpinning of learning spaces is a complex one. Of course, when it comes to initiating and effecting changes in a school setting, there are obviously complexities and challenges that school leadership encounters. In this regard, the emerging complexities experienced by school leadership include that of shifting the mindset of teachers to understand new teaching philosophical assumptions. However, the overall evidence suggests that the onus is upon school leadership to maintain and rely on the constructivist domains of learning in successfully taking their full leadership responsibilities.

We cannot underestimate the necessity of learners to have a certain degree of understanding of learning spaces; hence, they will be involved in co-designing them. In this regard, Thomas and Blackmore (2006) argue that a serial redesign process of classrooms reflects on the practices of both the teachers and the learners. Similarly, Kokko and Hirsto (2020) conducted a comparative ethnographic study in two Finish schools. The data was generated through individual interviews, focus group and document analysis. The findings revealed the importance of initiating continuing discussions between teachers and learners. It is believed that this exercise will enable expansion of learning process inside and outside school buildings into physical and virtual worlds. It would be of interest to note the argument advanced by Viberg, Anderson and Wiklund (2021), who emphasise the recognition of learners as both designers and owners of their learning that takes place outside the formal educational contexts. This is but one of the findings from a contemporary literature review on formal and informal dimensions of a learning space. The overall evidence points to the realisation of the importance of the philosophical centrepiece of teaching in the 21$^{st}$ century era. In essence, the saying "Nothing about us without us" becomes known when reflections on some initiatives of creating learning spaces in the developing countries apparently do not meet the expectations.

It is critical for a learner to have a degree of understanding learning spaces by tapping on the domains of teaching philosophy. However, the more relevant typical understanding is underpinned by a constructivism learning philosophy. A constructivist learning philosophy with its proponents that include, Vygotsky, Piaget, Bruner and Dewey hold a strong belief that learning occurs when a learner is actively involved in the learning process. On the bases of this belief, it becomes critical that a teacher adopts a more constructivist approach to teaching, bearing in mind that traditional classrooms set-up may not accommodate such an approach (Sawers, Wicks et al., 2016). Therefore, an assumption can be made that teachers with this mindset will be in a position to

understand the domains of a learning space that will be supporting a constructive view of learning. Expectedly, a learner takes full responsibility of content and direction in which the learning process is unfolding (Kolb & Kolb, 2005). It is of great interest to note that when a learner takes active roles in the formal dimension of learning spaces, their experiences and understandings of the domains of learning spaces can possibly be useful in creating an informal learning space. Overall, the literature seems to suggest that learning spaces can be understood on the bases of the teachers' philosophical position and the understanding of constructivism learning philosophy. Furthermore, on the bases of emerging evidence, it can also be suggested that learners are possibly inspired to create informal learning spaces that may result in the blurring of boundaries between formal and informal dimensions of learning spaces.

Some teachers in most developing countries, for some reasons, do not only attribute this phenomenon to contextual factors, but also to resistance to curricular changes and such changes finds them in a state where they have not adapted to the needs of 21st century learning. However, Chew and Cerbin (2021) argue that in most cases, many teachers, on one hand, often talk about teaching to be about transmitting knowledge and, therefore, teaching is essentially about telling. This suggests that their mindsets have not changed. On the other hand, the definition of learning to some is about making good scores in the examinations. In this regard, teaching and learning seem to be nothing less than preparing learners for the examinations. On the bases of these revelations, we have to admit that when teachers are not professionally developed on continuous bases to adapt to new teaching philosophies, it will be difficult for them to understand learning spaces that best support 21st century learning. Undoubtedly, classroom will then be organised in a teacher-centric pedagogical practices of outdated order of the 20th century. Therefore, influence that teachers have on how learning should take place is critical. Hence, learning spaces can be understood on the bases of the modes of learning of the 21st century learning that they are designed to support. In this regard, the literature seems to suggest that teachers sometimes construct the meanings of learning spaces on the bases of their beliefs of what learning means to them.

Drawing from the discussion in the paragraph above, it is evident that there are different understandings of learning spaces, and that a philosophy that a teacher subscribes to plays a critical role in defining a learning space or learning spaces. Therefore, learning spaces can be understood on the bases of assumptions about learning that is supposed to take place because of various socially embedded factors. It is on the bases of social constructivist philosophy of learning that determine how a learning space should be designed. Rosyidah (2021) argues that the assumption

of social constructivists is that learning takes place when learners use their ideas, experiences and strategies. Thus, learners come into the learning space with prior knowledge that a learning space must be designed and created to enable nurturing this knowledge. On the grounds of this assumption, it becomes important that learning spaces that support social interactions among learners are designed in that respect. Implied in the design of learning spaces is the notion of encouraging collaboration and problem-solving skills. Evidence suggests that learning spaces emerge on the bases of philosophical assumptions of learning that is socially constructed. Therefore, learning spaces should be understood on the bases of the learning process that informs their creation and use.

The effects of social constructivism philosophy of learning are congruent with the new teaching philosophy of the 21st century learning. Central to this new teaching philosophy is the fundamental conceptual shift in the mindset of school leadership and teachers. The shift is realised when school leadership and teachers now believe that learning is an individual active process and is socially constructed (Kopecki-Fjeland & Steffenson, 2021). Therefore, this conceptualisation results in the school leadership and teachers developing and embracing ideas around the issue of engaging learners on the bases of the ways of how learners should be learning in the 21st century. In the light of this fundamental conceptual shift, different types of learning spaces can be suggested that will support the ways in which learners nowadays actually learn. Overall, evidence seems to suggest that the teaching philosophical assumptions underpin the understanding about which type of a learning space has to be created. This implies that people involved have a better understanding of what a learning space actually entails.

In view of all the above discussions and arguments emerging from the literature about learning spaces, they seem to reflect a fundamental purpose of 21st century learning spaces as a new terminology that replaces the 20th century traditional classroom. It has emerged that there are multidisciplinary approaches of understanding learning spaces. However, there is a noticeable confluence of suggested learning processes from different perspectives from which different dimensions of learning spaces can be understood. Of course, on the basis of different theoretical and philosophical lenses of understanding learning spaces, despite being different, they however, all coalesce on a common objective. The common objective in the current thinking suggests that the 21st century learning is about the realisation of learner-centric pedagogical practices amidst digital technology integration in education. Therefore, the use of technology within a framework of learner-centric pedagogy, forms a major element of the 21st century learning spaces.

## 2.3 Principles to be considered when creating learning spaces

Various factors have an impact in the creation of learning spaces that can be considered in the absence of clearly defined route map. However, the ways in which learning spaces are created are informed by the design principles. Noticeably, the design principles that are developed by school leadership in collaboration with the teachers are influenced by how learning spaces concept is understood. Given that the understanding of learning spaces for the 21st century learning differs considerably, obviously their creation of learning spaces will also do. Factors to the creation of learning spaces include the design principles and activities in creating learning spaces for the 21st century learning involving the key role players.

### 2.3.1 The design principles

The design principles for the learning spaces become a benchmark upon which all activities from role-players are projected. Learning spaces emerge on the basis of the expansion of general understanding that learning can take place anywhere, anytime in this new era of the 21st century. Generally, the 21st century that comes with advanced technologies makes it possible for learning to occur anywhere anytime (Brown & Lippincott, 2003; Oblinger, 2006). Unlike in the past centuries where the emphasis was put on traditional (formal) classrooms with teacher and textbook as the only source of information, and as the only space for learning, designing the learning spaces for the 21st century learning is critical. The design principles for creating the learning spaces serve as a guide that bridges a gap that may exist between the outcome and the initial intention. A number of scholars provide proposed design principles for the learning spaces for the 21st century learning. Jamieson, Fisher, Gilding, Taylor and Trevitt (2000) suggest the design principles to include the following principles: design spaces for multiple uses concurrently and consecutively; to maximise the inherent flexibility and alignment of different curricula activities; maximise learner access to and use of the learning spaces and the design features and functions to maximise teacher and learner control. These scholars seem to suggest that the design principles are meant to promote the adoption of multi-disciplinary approaches and augment the initial suggested route map to create the learning space.

Oblinger (2005) argues that the design of facilities must be around people, to support multiple types of learning activities, enable connections outside and inside, to accommodate information

technology, design for comfort, safety and functionality and reflect on school values. Siddall (2006) is of the view that learning spaces should support diversified learning styles, be versatile, comfortable and attractive, information rich and technological reliable, maintained continuously, ubiquitous in space and time, use effectively and be allocated for the learning spaces. Presumably, school leadership can use their diplomacy by tapping on a cocktail of existing but different design principles to develop theirs that will be informed by pre-existing school contextual factors. The overall evidence from literature seems to suggest that there is no single universal set of design principles that encompass all the needs of different school backgrounds. Furthermore, it is evident that school leadership for each school must develop and enact its own route map. The pre-existing conditions and effects of contexts that differ from one school to another will inform this**.**

Since the design principles factor into creating the learning spaces, it is prudent for school leadership to demonstrate working collaboratively and to cooperate with others in their initial planning and innovative ways of formulating a route map. That said, the behavioural practices of school leadership will be an acknowledgement that in the beginning, the design of new learning spaces and remodelling the existing classrooms is an active participation of other key role players such as teachers and learners to begin with. In that light, Grannäs and Stavem (2020) argue that the potential of learning spaces users includes teachers' perspectives and learners' voices in co-designing learning spaces is a positive step towards achieving the main objective. Co-designing refers to the design activities that involve the learning spaces designers and non-designers working collaboratively in developing the new designs (Bøjer, 2021). Indeed, the main objective is to create learning spaces that best support the 21$^{st}$ century learning.

In substantiating the above argument, Bøjer (2019) is of a view that an engagement of both teachers and learners in the design process will enhance the correspondence of teaching, learning spaces and the overall organisation of the school. Of course, their active participation in this discourse will minimise the discrepancies in their perceptions about learning spaces and its usage. Overall, the literature seems to suggest that the principle of co-designing the learning spaces will benefit school leadership in terms of circumventing some of the challenges that would have emerged when they reserve designing learning spaces to themselves. The design principles for the learning spaces agreed upon by different stakeholders become a guiding tool that when embraced fully, the desired end goals would probably be realised. It is worth noting that this initial practice inevitably draws out differing perceptions of learning spaces emanating from the different positions and interests from the stakeholders. OECD (2013) for example, proposed seven physical

learning spaces design principles. The principles include making learning central, ensure learning is social and collaborative, learning is attuned to learners' motivations, sensitive to individual differences, be demanding, assessment to be used consistently and promote horizontal connectedness across learning activities in and out-of-school. Seemingly, these design principles are the architecture of the ecosystem for learning that must be considered when creating the learning spaces for the 21st century learning.

It can be noted that the design principles do not give a detailed procedure that school leadership from different contexts may follow. The implication of non-existence of detailed procedure in creating learning spaces is an indication that there is no one-size-fit-all set of activities. The provisions of these design principles seem to suggest that the learning spaces that will be created will be supporting individualised learning that will also be extended beyond the confines of the traditional classroom and the school. Notwithstanding this, the fact that there is an ongoing research on learning spaces for the 21st century learning, expectedly, there will be more provisions for the multiplicity of design principles. The Joint Information Systems Committee (JISC, 2016) brings to the fore a different version and advocates for learning spaces design principles that bear different features. JISC (2016) suggests that design principles for the learning spaces include taking into cognisance the current school conditions and ever-evolving technological and pedagogical dimensions. The overall evidence seems to suggest that the design principles for learning spaces and procedures in creating it may differ drastically. However, there is confluence of desired outcomes. A conclusion may therefore, be drawn to perceive the design principles as all-encompassing benchmark of creating learning spaces that may be adapted towards a common objective.

The prevalence of a common ground and objective from an overview of the design principles from different scholarly work as presented above is critical to acknowledge. These principles seem to authenticate the confluence of different aspects from a plethora of design principles from different scholars towards the main objective of creating learning spaces. Importantly, the main objective of learning spaces is that of supporting different learning modalities for the 21st century learning. The design principles from different perspective seem to give insight to school leadership and teachers to understand that there are no general sets of designing the learning spaces. The non-existence of general sets of designing principles can be attributed to how learning spaces for the 21st century is understood on the basis of different perspectives from school leadership. It is therefore, critical that learning spaces designers, school leadership, teachers and learners begin

with the end-in-mind for what the ultimate goal they intend to achieve is. Of course, the end-in-mind is the ubiquitous learning that entails learning that takes place everywhere anytime when all the affordances are put in place and are accessible (Suartama, Setyosari & Ulfa, 2020). The literature suggests that school leadership may make use of a cocktail of design principles that are from different sources to create the learning space.

#### 2.3.1.1 Design principles in practice

The well-coordinated and written design principles may sound good but in practical terms, they can have a daunting effect. Several studies have been conducted that elucidate the practicality of design principles in creating learning spaces from existing traditional classrooms. In this regard, Grannäs and Stavem (2020) conducted a case study in Norwegian schools sought to elucidate the designing and redesigning of school buildings for the required physical learning spaces guided by design principles. Interestingly, as the study progresses, they had a better understanding of design briefs and blueprints of initial inceptions of classrooms buildings. The design briefs and blueprints were then used to compare and ascertain changes that were made in remodelling school buildings. Thematic analysis (Braun & Clarke, 2006) is deemed appropriate for the changes thus made.

The findings reveal indications of success in the creation of learning spaces by remodelling classrooms. The indicators in this regard further show that learning spaces could accommodate different sizes of groups and different kinds of learning activities. Noticeably, in this case, there is a significant transition to high degree of flexibility, multi-use learning space. The evidence drawn from this study seems to suggest that a better understanding of learning spaces that support the 21$^{st}$ century learning is complementary to design principles that were put in action. Furthermore, it is evident that the success of creating the physical learning spaces guided along by the design principles is not an end, but a beginning of continuing redesigning them. This discourse seems to be strengthened by the alignment of pedagogical practices to the learning spaces. Therefore, the findings suggest that the success of creating learning spaces in this regard, is determined by the degree to which the learning spaces are effectively utilised by both the teachers and the learners.

#### 2.3.1.2 Redesigning the classrooms

Redesigning the classrooms is one of the factors that indicates the creation of learning spaces is underway. Considering the formal learning spaces intended to support the 21st century learning, mostly emerge through the redesigning and redeveloping historically existing traditional classrooms of the 20th century. The reality is that classrooms are ordinarily the dominant physical learning spaces to date where most learning and teaching activities occur (Barrett, Davies, Zhang & Barrett, 2015; Barrett, Treves, Ambasz & Ustinova, 2019). Therefore, changing the classroom design from traditional set-up to the learning spaces for the 21st century learning requires different changes to be made and implemented. Effective changes may include building designs with visual, acoustic, thermal and spatiality considerations (Barthelemy & Jeannin, 2020; Ismail & Abdullah, 2018). Furthermore, the physical set-up of furniture such as chairs and tables for maximal use can be considered as part of redesigning traditional classrooms to mention but a few. Overall, the literature seems to suggest some of the changes that need to be made by transforming the 20th century traditional to contemporary learning spaces that best support the 21st century learning.

The adds-on to re-designing and re-developing traditional teacher-centric learning spaces is complementary to the basic needs for transforming classrooms. On the grounds of a multiple case study in Malaysia (Nor, Nambiar, Ismail & Adam, 2018), using four secondary schools that were conveniently sampled, the findings show the success of changes that were made through the engagement of other stakeholders such as the teachers. The effects were provided for by the technology equipped, colourful and spacious classrooms with cool environment and these were found to be very appealing. Classrooms were modified to include flexible arrangement of furniture and to provide space for internet use as well. However, Nor, et al. (2018) argue that the effectiveness of the redesigned and redeveloped classrooms is impeded by the lack of internet connectivity. Unfortunately, the lack of access to the internet deprives the learners the opportunities, for instance, of online or virtual and hybrid learning (Tabiri, Jones-Mensah, Fenyi &. Asunka, 2022). It is evident that redesigning and providing physical infrastructure in schools are insufficient for the learning spaces to support the 21st century learning.

Despite the existing constraints, for the school leadership to influence and support staff for work related commitments, cooperation and collaboration is considerably a step above adverse situations (Bradbeer, 2021; Peterson, 1991). The literature seems to suggest that although there are complex encounters in redesigning traditional classrooms, for school leadership tapping on the

potential of all stakeholders can yield positive outcomes (Batts, Green, Stelzer, Truby & Kim, 2022). Thus, the involvement of stakeholders and school leadership taking a proportional level of risk to relinquish some individual autonomy to others is a step towards accomplishing the desired outcomes. The redesigning of traditional classroom is not an overall stand-alone and exclusive activity. In hindsight, the type of learning modality is always considered in a continuum. The view of learning that enables learners' self-centred learning resulted in the assumption that it is from interactions, whether with other people, with aspect of the environment, with information or through the combination of these (Miller, Shapiro & Hilding-Hamann, 2008). Learning is therefore, said to be informed by the social constructivist theories (Mathews, Andrews & Adams, 2011) that learning spaces must support.

In this regard, constructivist theories of learning (Bruner, 1961) urge that learning should be through individual exploration and social interactions (Campbell, 2020). It is a way of advocating a different view of the 21st century learning as opposed to the society dominated by industrial era of imparting content knowledge. The 21st century learning, viewed as multimodal practice put emphasis on learner-centric practices and less on teacher-mediated transfer of information (Sumardi, Rohman & Wahyudiati, 2020). Drawing from the assumptions as presented above, a conclusion can be drawn that the redesigned and reconfigured traditional classrooms are meant to support learner self-directed learning that takes place everywhere and anytime.

### 2.4 Implications of key role-players' involvement in creating the learning space

The activities from key role-players are a factor in creating the learning space. Of course, the activities will be guided by well-structured design principles. In reflecting on understanding of the learning space for the 21st century learning, a scope of design principles as discussed above is key in creating the space. However, there is nexus between learning space, technology and pedagogy that currently exist. In view of this nexus, this study ponders to focus mainly in advancing the creation of the learning space that best support the 21st century learning at school levels in rural setting. In this regard, the prime factor in this section is to bring to the fore what the literature demonstrates as the unified approach that have been pioneered elsewhere which may or may not be generalised. To begin with is to identify the key role-players, their activities and implications in the creation of the learning space for the 21st century learning.

Various key role-players are stakeholders that have a positive effect in creating the learning space for the 21st century learning for learners. In support of stakeholders' intervention, a qualitative approach research design conducted collaboratively by both Biggs and Hacker (2021) involved nineteen professionals and parents as participants in the United States of America (USA). Semi-structured interviews guide was the only instrument used to generate data. Interview data were analysed by using a qualitative content analysis (Patton, 2015) in order to elucidate parental engagement in schooling affairs. The findings strengthened the positive impact of social consciousness, knowledge and skills that are required in transitions, transformations and organisational change of schools for the 21st century learning.

There are limitations of the above study that included the sample space which was not of a widely diverse demographics; all participants were female and nearly all almost white. This is perceived to be defeating the intentions to consider the context in which the research study is conducted. Unfortunately, this study did not include the socioeconomic status of the communities when human beings were subjects for data generation. Both socioeconomic factors and the context in which the creation of the learning space took place were not considered. This is an indication of the shortfalls that are noted in this study. Notwithstanding the shortfalls of this study with respect to the impact from the two factors to the success or failure of the new paradigm of the 21st century learning, a lesson can be drawn.

### 2.4.1 School managers formulating the vision and mission statements

Following the design principles that school leadership has established collaboratively with all relevant stakeholders, the first and foremost vitally important steps must not be missed. The school leadership, with the principal as the most senior, undoubtedly leads the re-engineering of the old vision and mission statement of a school. According to Allen, Kern, Vella-Brodrick and Waters (2018), the statement of a school outlies the purpose of a school, goals, context and aspirations that govern the organisation. These statements are the main guiding documents that show the intention for the new direction the school will be driven. Accordingly, Allen, Kern, Vella-Brodrick and Waters (2017) aver that the vision and mission statements of schools provide good indications about the purpose that the schools set for themselves. School managers have the responsibilities to cast the net in ensuring that there are broader consultations in drafting vision and mission statements. The vision and mission statements should be overtly displayed in all strategic positions of the school so that all the relevant stakeholders can easily acquaint themselves. They serve as an

unspoken contract between the school as a juristic person and a variety of stakeholders to thrive towards a bigger purpose. Sularstri, Syahril and Adi (2021) argue that the vision and mission are at the apex of all guidelines towards which all the school activities can be directed. That said, school managers and teachers would therefore, be always aware that whatever they are doing, it must speak to this main guiding document.

The findings of the study by Sularstri, Syahril and Adi (2021) identified what to be considered when formulating the vision and mission. They argue that the formulation of the mission statement must be initiated from the holistic analysis of the school and the surrounding environment. It emerged from this study that the process of formulating the mission statement is the responsibility of the committee representing all key stakeholders in a school. This analysis is then succeeded by the development and prioritisation of targets and objectives. Overall, the evidence seems to bring to the fore the importance of the school vision and mission. They are an important instrument that gives direction for the activities in order to achieve the desired school objectives.

### 2.4.2 The role of the teachers in creating learning spaces

Teachers' activities contribute immensely in creating learning spaces that best support the 21st century learning. Generally, innovations and creativity in the learning space cannot be the responsibilities of school leadership in formal leadership positions only. Knowing that leadership is concerned with vision, strategic issues, transformation, people and doing the right things (Day & Sammons, 2016), actual creativity and innovations are the responsibilities of teachers at school levels. In this regard, teachers have a powerful voice that can shape the design principles of the learning space that school leadership intend pursuing. According to Gómez-Parra and Daiss, (2022), transformation does not occur under stable and fixed conditions. These scholars further assert that transformation is a response factors that threaten the functioning of an organisation. The voices from the teachers are of significant importance to be considered from design to the implementation of the shared vision of transformation. Indeed, the design process involves aligning teaching, learning space and the overall school organisation (Bøjer, 2021). Instinctively, without the involvement of teachers directly or otherwise in the design process, they cannot be expected to know how to use the learning spaces and align their pedagogical practices with them (Bøjer, 2021). Conversely, teachers' involvement will enable them to link pedagogy to the learning space as an integral component of successful transformation (Fisher, 2021). Deed and Lesko (2015) aver that the capacity of teacher to adapt to new mode of teaching and learning is

hampered by the previous school memories and adopted routines that remain strong. In essence, the geometry and surface properties have an influence on user of the learning spaces (Kvan, 2021).

The non-involvement of teachers at all levels from initial design and implementation of learning spaces has ripple effect. Bøjer (2021) argues that the non-involvement of teachers either directly or indirectly in the design process will be fraught with challenges. In view of the above, challenges begin to emerge when pedagogical practices are not aligned with the intentions of the learning. This is because the learning space itself does not change pedagogy (Bøjer, 2021). It is therefore, critical that teachers are actively involved and actively engaged from initial stages of designing principles that guide the creation of the learning space.

In attesting to this challenge of non-involvement of teachers, there are findings from a study conducted by Bradbeer (2021) in six New Zealand primary schools. Bradbeer's (2021) findings indicate that the newly designed learning space predominately created tensions between teachers, learners and the aspired contemporary pedagogical practices. Evidently, the literature seems to suggest that the non-involvement of important stakeholders in the initial stages of the learning space design results in unintended consequences during the implementation stages. In short, any kind of transformation that will be imposed on the implementers will be fraught with enormous challenges that will lead to ripple effects.

Above all, qualitative research approach by Bisset (2014) in New Zealand secondary schools was conducted and expanded on the involvement of other stakeholders with regard to creating the learning spaces. The major findings revealed that tangible changes alone do not define the 21st century learning spaces but by the teachers, parents and the community. Since this is the case with the learning spaces, school leadership and teachers on one hand, must support the intangible and pedagogical changes that are necessary for the newly established school vision. Parents on the other hand, are instrumentalities in various ways to further this course (Afangideh & Kpee, 2018). The literature seems to suggest that the school leadership has the responsibility to translate the intentions of the 21st century learning space into actions. They need also to use a participatory process of all stakeholders in engaging with users of the learning space for the ongoing negotiated refinements for the relevancy of the learning space to the 21st century learning.

The individualised creativity and innovations from intrinsically motivated teachers on using traditional classrooms as the learning space becomes a source of inspiration for others to follow

suit. Creativity is one of the critical aspects that teachers must do in teaching and learning activities (Irfan, Tamsah & Hasbi, 2022). Undoubtedly, the deviations of teacher behaviour in the teaching and learning environment may cause teacher-learner behavioural conflict (Hendrick, Kos, Cillessen & Mainhard, 2022). It is at this point that the efficacy of influential capacity of the teacher regarding good classroom control and learners' behaviours is tested. According to Shafiee and Ghani's (2022), in a study that they conducted from Malaysian secondary schools, one of the findings was that there was no significant influence of teacher efficacy in controlling learner behaviours, managing the classroom and these activities contributing to the 21st century learning.

There is a significance of a multiple case study design from a quantitative approach that was conducted by Nor, Nambiar, Ismail and Adam (2018) in four Selangor secondary schools. The findings reveal that learners have significantly developed a collaborative learning approach in classrooms that were physically redesigned and re-modified. The collaborative learning approach emanate from successful individualised teacher initiative. Evidence to this effect is the flexible arrangement of furniture that created ample space for teachers to move around and internet accessibility during the learning process. This practice provided learners with opportunities to enhance and expand their learning that strengthens interpersonal, communication and personal skills. Thus, the findings among others from this study seem to demonstrate that indeed there is high possibility of individual efforts in creating learning spaces with success. In the final analysis, this section has indicated that teachers play a prominent role in the creation of learning spaces. The benefits of involving teachers have been ably illustrated.

### 2.4.3 Teachers and learners as co-creators of learning spaces

The co-creation of the learning spaces by both the teachers and the learners has a contributing effect in terms of transforming traditional classrooms into learning spaces. When learners are given opportunities to engage in co-creating learning spaces with the teachers, they benefit from the enhancement of creativity, innovation, communication, collaboration and problem-solving skills (Sulistyarini, Joyoatmojo & Kristiani, 2022). Indeed, these skills are crucial for the 21st century learning. They can be successfully developed if the learning spaces are designed and created by using different innovative ways to support a variety of learning modalities for the 21st century learning. Moreover, there are advantages of involving learners in creating learning spaces for the 21st century learning. In this regard, a study conducted by Kariippanon, Cliff, Lancaster, Okely and Parrish (2019), using nine secondary schools as research sites in Australia, the main

objective was to elucidate the collaboration and behavioural engagement between teachers and learners in creating the learning spaces. The findings showed that the advantages were more than when the learners were excluded. The findings revealed that learners spend significantly more time actively engaged with lesson content, learning collaboratively in groups and less time on verbally off-task activities. Overall, there are suggestions that the involvement of learners from early stages of creating learning spaces will enhance the effective utilisation of learning spaces to the benefit of all learners from different socio-cultural backgrounds.

It is important that both the teachers and the learners use learning spaces maximally in order to achieve broader learning outcomes. Undeniably, since the teachers and the learners are expected to co-create learning spaces for the 21st century learning, that in subtly ways, makes both of them to become more aware of the alternative ways of using the space amicably and maximally (Lundström, Savolainen & Kostiainen, 2016). Since this is the case with both the teachers and the learners, the expectation is that they are provided with the necessary support by school leadership.

### 2.4.4 Parental involvement in informal and formal learning space

Parental involvement in creating learning spaces is critical. Knowing that learning in the era of 21st century takes place anywhere any time, parents are obliged to support their children in creating informal learning spaces and to provide safety and security, especially beyond the school contact times. According to Sylvia, Melhuish, Sammons, Blatchford and Taggart (2010), parents are important facilitators of their children's learning in informal settings by providing a stimulating home learning space. Thus, the environment that is conducive to effective out-of-school learning that is provided by informal learning space, is made possible by effective parent-child relationship.

Parents are an important stakeholder in promoting learning that also has to take place even beyond the schools' contact time. According to Harris and Goodall (2008), parents in particular, make a maximum difference to learner achievement by supporting learning that is taking place within home. The learning that takes place at home becomes effective when parents provide a dedicated learning space and apply the same rules as the school for that space to be used effectively (ARACY, 2015; Quinn, 2020). Parents will have knowledge of rules that are applied at schools if there are effective parent-school partnerships. However, unfavourable socio-economic conditions in rural context may lead either, to the failure to initiate these partnerships or to the collapse of existing ones (Msila, 2012; Myende & Nhlumayo, 2020). Despite challenges that may hinder these

partnerships, some parents may have different means of ensuring that their children benefit from informal learning spaces that they have co-created.

For school leadership and teachers to invite parents to attend school events can be one of the strategies to develop good relationships. In general, school leadership needs to create an inviting and stimulating school culture that promotes parental engagement with their children's learning. Harris and Goodall (2008) argue that it is not necessary for the parents to be present at school in order to engage with child's learning, but what matters most, is what they do with their children at home. However, it is more important that the degree of cooperation between the teachers and the parents gives effect to the blurring of boundaries between home-school learning environments. Perhaps, the success in this endeavour in engaging parents in schooling affairs may be beneficial to the learners concerning the creation of effective informal learning spaces. The overall evidence seems to suggest that for school leadership and teachers to engage parents by using different strategies will possibly have a positive effect in creating the 21st century learning space with great success.

Importantly, what is crucial is that what communicated and how it is communicated with relevant stakeholders will determine the quality of the interactions. That is the extent to which interactions are constructive, all depend on the clarity of the communication. All stakeholders will be inspired and encouraged to put together concerted efforts to support school leadership in the design process and the creation of the learning spaces. Internationally, this has become an integral part of transformation in educational landscape practices for the past decades (Oldham, 2019). Landscape is understood as an area perceived by people with character being the result of the action and interaction of human or natural factors (Council for Europe, 2000). The focus is on promoting and developing individual creativity and originality.

This idea of inviting stakeholders such as parents is believed to benefit schools from innovative ideas from actors such as teachers who carry relevant knowledge (Förster, 2020). Moreover, the interactions with various interest groups, emancipates the marginalised communities for their meaningful contributions to the schools, especially in the rural settings. Olswang and Goldstein (2017) aver that it is critical to consider the attitudes and values of stakeholders because their intervention has a potential to successfully create learning spaces for the 21st century learning. Overall, the literature seems to suggest that the involvement of all relevant stakeholders for the

realisation of creating learning spaces for the 21st century learning, is important; hence, education is a societal issue.

### 2.5 Determinant aspects for learning space (re-)configurations

There are several determining aspects that are critically important with possibilities for new ecologies of relationships between activities, technology, and the users of learning spaces. The suggested provisions in the literature indicate the existence of various approaches of creating learning spaces and the 21st century learning for learners. A strong corpus of empirical research provides different approaches of how learning spaces for the 21st century can be created (Biggs & Hacker, 2021; Bøjer, 2021; Fadzil, Hassan et al., 2019; Grannäs & Stavem, 2020; Jamieson, Fisher et al., 2000; Kvan, 2021; Nor, Nambiar, Ismail & Adam, 2018). An overall outlook of literature in this regard does not indicate an internationally negotiated process which encompasses different social, economic and political spectra. Therefore, the arguments on how learning spaces can be created are attributed to a cocktail of information drawn from various studies. For example, in advancing the notion of schools creating learning spaces that involved rich information from other scholars, Jones and Le Fevre (2021) conducted a qualitative case study involving eighteen teachers from three New Zealand schools.

The critical question for Fevre's (2021) study was about understanding the rationale behind the learning space for the 21st century learning. It is noteworthy to acknowledge that school managers from one of the three schools in this study understood the necessity to engage staff in dialogue about understanding the school vision. They provided teachers with opportunities to share their understanding of learning spaces for the 21st century learning. Teachers were also encouraged to share their perceptions and risk on pedagogical practices that must be aligned with the design principles of the learning space. Presumably, an understanding of the learning space for the 21st century learning by school managers will be a determinant of (mis-) alignment of the actual learning space and the process followed. The findings revealed that different influences by school leadership influenced teachers differently. Some influences by school leadership inspired teachers to participate and contribute immensely to the envisaged transformation of their schools. Apparently, school leadership is the cornerstone of inspiration for the teachers to play their active role in implementing a shared school vision of creating learning spaces that is well articulated to them.

### 2.5.1 Learning space and technology relationships

The tendency for various initiatives in creating learning spaces for the 21st century learning is somewhat, more technology-driven and to a lesser extent, considered pedagogy-laden (Soysal & Radmard, 2017). Some of these initiatives are aspirational whilst others seem to be based on experiences (Trittin-Ulbrich, 2022). A case study design using a qualitative approach involving twenty different schools in Ontario, conducted by Hughes and Morrison (2020) provides an overview of how physical spaces can be created. Data was generated by using interviews on teachers, field observations and social media posts. The findings revealed that more digital technologically based resources put in display that facilitate personalised learning became an incubator for creativity and collaboration among learners. It is noted that the control of learning is in the hands of the learners. Montelongo and Eaton (2020) argue that digital technologies tend to perpetuate dominant attitudes, agendas and assumptions that those learners in schools situated in affluent communities are the only ones to benefit. This seems to suggest that the learner-centric pedagogical practices in flexible learning spaces, are but one of the solutions to the lack of advanced digital technologies.

### 2.5.2 Physical learning spaces and the wellbeing of the learners

Physical learning spaces should also be designed and organised by taking into cognisance the well-being of both the teachers and the learners. Clifford (2012) suggests that a physical learning space should be comfortable, allow different seating patterns and configurations, and bring plenty of light and air. Ordinarily, classrooms are the dominant physical learning spaces where most learning and teaching activities occur (Barrett, Davies, Zhang & Barrett, 2015; Barrett, Treves, Ambasz & Ustinova, 2019). It is on these bases that a classroom should be considered to provide a variety of factors that are not limited to size and structure, visual, acoustic, thermal and spatial (Lei, 2010; Suleman & Hussain, 2014). In view of all what should be considered to bring about the well-being of learners and the costs involved, they will be far-fetched ambitions in rural schools to be learning spaces that meet all the above requirements. This is attributed to the negative impact of rurality.

It is important to identify the key role players with activities that factor into the well-being of the learners. Merriënboer, McKenney, Cullinan and Heuer (2017) argue that the dominant stakeholders in school buildings are architects, interior designers and information communication

technology (ICT) specialists. However, it is of utmost importance that these stakeholders involve school leadership and teachers on the expectations of architectural designs. The scholars perceive participatory approach by key stakeholders that it can yield very rewarding outcomes from a carefully planned, communicated and thereafter designs. Seemingly, the indication is that a participatory approach is critically important because it involves the users of the space that must contribute in the design process.

### 2.5.3 Communication among role-players

The voluminous contributions of communication amongst key role players in transforming existing traditional schools into the 21st century learning space need to be unmasked. A cross-sectional research design study by Fadzil, Hassan, Mohamad, Zainudin and Ali (2019) in Malaysia put emphasis on dialogic communication. The findings revealed that communication mediated change of organisation as alluded to by Reis (2002). It also found that all stakeholders understand the necessity for change and why certain things need to be changed within the given period. The study suggested that the adoption of dialogic communication approach amplifies the possibilities of school transformation that address the bigger angle of human aspects. Implicit in this practice is the subtle beneficiation of school leadership with regard to issues of general resistance to change by teaches that become somewhat subverted.

### 2.5.4 Dialogic communications

Dialogic communications as opposed to discussions foster a culture of conversation than that of contestation. Of course, both are important; hence, they seek to settle issues impeding the creation of learning spaces for the 21st century learning. Nash, Bradley and Chickering (2008) argue that the discussions on one hand presents arguments, refutation and debates which my result in unintended consequences. Dialogue on the other hand, is more open for mutual understanding, a subtle avoidance of "winning' dispositions. So, there are people that are involved in dialogic communication with regards to creating learning spaces. School managers have a pivotal role to initiate and lead the transformation process in collaboration with other stakeholders (Öngel, Tabancali & Korumaz, 2022). According to Gumusluoglu and Ilsev (2009), transformational leadership has a positive influence on the followers' creativity. Thus, the principal, as the most senior member of the school leadership who adopts transformational leadership, promotes change and improvement in schools (Leithwood, 2007; Leithwood & Jantzi, 2008). According to

Hallinger (2003), transformational leadership is concerned with building the capacity of an organisation to focus on its purposes and to support the developmental changes to practices of teaching and learning. It is through dialogic communication that mutual agreements among stakeholders that lead to effective transformation can be achieved.

In this case of effective agreement, French (2021) conducted a case study on the effectiveness of transforming traditional classrooms to different settings of learning spaces. Teachers, designers and school managers were interviewed face-to-face to generate data in New Zealand. The study sought to understand the link between what the schools intended pursuing and the actual reality of the learning space and its use. The findings reveal that there was no guidance to each layer of one school to allow for the creation of the learning spaces to flourish. Teachers in this school take an initiative to create learning spaces, but it became more of the traditional classroom in nature probably because of the lack of dialogue regarding planning and order. The outcome of the study put emphasis of the importance of dialogic communication in a sense that its lack results in unintended consequences. Another school in the same French's (2021) study has a principal preparing teachers to inhabit the school with prescribed team-teaching vision, flexible learning space and non-traditional furniture. Indeed, the effectiveness of dialogic communication in this case, resulted in the successful implementation of strategies geared for creating learning spaces. The literature seems to put emphasis on dialogic communication with key stakeholders on continuing bases to increase certainty of deeper understanding of what is expected to be done, when, how and why.

### 2.5.5 Implications of COVID-19 pandemic in creating learning spaces

This study was conducted during the devastating effect of COVID-19 pandemic globally, and in all sectors including the education sector. The new and advanced technologies enable a paradigm shift from teacher-centric traditional classrooms to the learning space that best support the 21st century learning. Given the devastating effects of coronavirus (COVID-19) pandemic on the school closures globally, the only alternative for continuing with teaching and learning was to adopt distance learning. With vast amount of information that is readily available through different platforms and media, makes distance learning to be possible using among other things, advanced technologies (Boyinbode & Akintola, 2008; Yahya, Ahmad & Jalil, 2010). In this regard, advanced technologies and various media platforms have enabled the creation of a variety of learning spaces that best support the 21st century learning for learners.

The significance of advanced technologies in education during the era of the COVID-19 pandemic is the enhancement of learner's self-centred learning approach. Since this is the case, the 21st century learning is perceived to be leveraging learner agency and motivational capacity that enables learners to take ownership of their learning (Brooks, 2012). According Manyukhina and Wyse (2019), agency is generally defined as individuals' will to act. In the context of learning, both scholars define agency as the capacity to act independently and to make individual's choices. In this regard, demonstrable learner agency is evident when it is in the form of learners actively engaged in activities in which they take initiatives (McGregor & Frodsham, 2022). However, Boyle (2022) argues that learners from disadvantaged contexts experience constrained agency in developing their identities as learners. However, the overwhelming evidence from different scholars indicates that the success of school leadership does not only depends on using effective practices, but also using them in the manner that is appropriate to the context (Leithwood, Harris & Hopkins, 2022).

### 2.6 Challenges school leadership encounters in creating the learning space

Various challenges of creating learning spaces that school leadership are experiencing are not only from physical infrastructure but also include influencing teachers to transform their traditional teacher-centric practices. Notably, schools are workplaces that require transformation from outdated traditional classrooms where a teacher is perceived as the only source of knowledge in schools. The learning space that best support learner-centric pedagogical practices for the 21st century can be created in any given context. Notwithstanding, the reality is that school managers have the responsibility to develop deep capacity among all teachers to be at the forefront of creativity and innovativeness (Harris, 2010), there are challenges encountered that must be systematically addressed. The following presentations are the findings from the review of related literature on the phenomenon under study. Challenges to this effect emanate from teacher adaptations; teacher incapacity; school leadership; parental engagement; network challenges; social relations involving teachers and learners; the impact of COVID-19 pandemic; rurality; transition from formal to informal dimension of the learning space; two tier schools in South African education system; socio-economic factors, technology integration and school buildings.

### 2.6.1 Teacher adaptation

The creation of learning spaces through either remodelling traditional classrooms or erecting new buildings from contemporary architectural designs that meet the 21st century learning is fraught with challenges. Grannäs and Stavem (2020) argue that changes made in the learning space do not necessarily effect the perceived change in pedagogical practices. For example, the majority of teachers who only have the experiences of traditional didactical practices do not automatically adapt to learner-centric pedagogical practices. Teachers will need to unlearn traditional teaching methods in order to learn and master the uses of new and relevant teaching instruments for the 21st century learning (Yeni & Can, 2022). On the same breadth, the holistic view of remodelling classrooms to the learning spaces can in most cases, not be done in tandem with the teachers' and learners expected behavioural changes and developments for adaptation (Alshumaimeri, 2022). If remodelling and teacher adapting to new pedagogical practices of the 21st century are not done concurrently, a lot of time will be wasted (Lovejoy, Mow, Edwards, Prain & Waldrip, 2014) and probably, insurmountable challenges may emerge. Seemingly, it is important to consider other factors that need consideration when classrooms are reconfigured so that they add value to broader educational objectives.

The challenges include a possible disjuncture between teachers adapting to new pedagogical practices for the 21st century learning and traditional classrooms that have not been remodelled (Sasson, Yehuda, Miedijensky & Malkinson, (2021). Hence, teaching styles and classroom organisations are linked (Horne-Martin, 2002). Undoubtedly, this may to a large extent curtail the good intent for teachers to adapt and enhance learner-centric and learners self-directed learning. Of course, this is due to the negative impact and the influence posed by traditional or poorly redesigned classrooms (Merriënboer, McKenney, Cullinan & Heuer, 2017). The opposite is also a reality where teachers are unable to adapt to learner-centric pedagogies after traditional classrooms have been redesigned to be flexible to accommodate various 21st century learning modalities (Beery, Shell, Gillespie & Werdman, 2013). Therefore, both constraints seem to underscore the teachers' adaptation as a challenge in creating learning spaces that best support the 21st century learning for learners.

There are multiple challenges that school managers are experiencing, even though teachers may have been involved, from the initial stages of design to the inception of implementing any process of creating the learning space (Frelin & Grannäs, 2020). The challenges include low socio-

economic status of parents (Dube, 2020) and a broad lack of affordances for creating and improving and maintaining learning spaces to remain relevant to the current educational landscape. Overall, evidence seems to suggest that apart from the physical learning space, school managers experience challenges related to teachers adapting to new modes of pedagogical practices and expected learner behaviours.

Teachers' incapacity relating to technological, pedagogical and content knowledge (TPACK) needs to be swiftly addressed in order for effective transformation to take place (Long, Zhao, Li, Zhao, Xie & Duan, 2020). Teacher incapacity to infuse technology in teaching and learning has a negative impact on the creation of learning spaces that best support the 21st century learning. Teachers lack the capacity to adapt and align their pedagogies to the 21st learning. According to Merriënboer et al. (2017), the challenge of misalignment of pedagogy to the learning spaces is sometimes, caused by traditional classroom designed for the 20th century that do not fit the contemporary pedagogies. Frelin and Grannäs (2022) also argue that even the newly designed school buildings pose a similar challenge when they have been designed without the vision of pedagogies that will be taking place. To this end, Tsakeni and Jita's (2019) qualitative case study conducted from six secondary schools in the Free State and KwaZulu-Natal provinces of South Africa, have identified teacher incapacity to be a serious challenge. The finding among others was that teachers lacked the knowledge base of technological, pedagogical and content knowledge (TPACK) (Chai, Koh & Tsai, 2010). This knowledge base assists teachers to integrate information and communication technologies (ICTs) in redesigned and remodelled classrooms into the learning space becoming effective. If this is the case, effective application of this knowledge may result in learners developing the necessary 21st century skills, the core objectives of the 21st century learning. Overall, the evidence seems to suggest that learning spaces become ineffective if there is a lack of teacher capacity in terms of knowledge and aligning pedagogies to it.

### 2.6.2 Teacher incapacity

Teachers are the first line of school-based transformation. However, teachers' incapacities hinder the creation of learning spaces and for them to concurrently, adapt to new pedagogies of 21st century learning for learners. Various dimensions are attributed to teacher incapacity, and in this section, I discuss two, namely, teacher professional development and teachers' resistance to change.

### 2.6.2.1 Teacher professional development

Pre-service teacher training and in-service teacher professional development that are aligned to the new curriculum reforms (informed by the 21st century learning) give teachers more latitude to understand and commit to their role obligations (Mogashoa, 2021). Teacher professional development (TPD) is a multi-layered method that is designed to assist teachers to meet the challenges of the new specifications (Borko, 2008; Lyanga, 2021). The new specifications for the 21st century learning include among others, pedagogical practices that promote learners developing the 21st century skills. Of course, the only gateway to enhance this development is that teachers are empowered and supported by school leadership to create learning spaces that best support the 21st century learning in a learning process (Zimmer & Mathews, 2022). The support that school leadership is expected to give to the teachers, is informed by multi-layered models of continuing teacher professional development designed by educational authorities at higher levels.

In-service, teacher capacity building initiatives are organised as school-based teacher professional developments. In this regard, Nhlumayo (2020) conducted a qualitative case study design to explore school-based teacher professional development (SBTPD) in one of the rural education circuits in the province of KwaZulu-Natal, South Africa. The objectives of SBTPD include professional competency, independence and self-control that teachers are expected to display in the workspace (De Clercq, 2013). However, Nhlumayo (2020) argues that the main objectives of SBTPD that are informed by the incentivised integrate quality management system (IQMS) (ELRC, 2003) and continuing teacher professional development policies (CPTD) (Republic of South Africa, 2007), which thus far, have not been achieved. Since the main objectives are not achieved, the implications among others, are on new strategies to be introduced for the efficacy of professional teacher development that is critical.

Nevertheless, the reality is that generally, most teachers in public schools have not developed the 21st century skill components to their learners during their professional pedagogical practices. Kai Way Chu, Reynolds, Tavares, Notari and Wing Yi Lee (2017) specify these skills which, included among others, information literacy, information technology literacy, media literacy and digital collaboration skills. Overall, the literature seems to suggest that school managers encounter insurmountable challenges to develop teachers in order to transform school into learning spaces for the 21st century learning. School managers have a challenge to figure out which competencies

teachers have and how the available hardware and software are supporting those competencies (Bülow, 2022; Shidiqa, Promkaewa, Faikhamtaa, 2022; Supadi, 2022).

School leadership is accountable for the professional development of teachers (Jesacher-Roessler & Agostini, 2022). Professional development enhances teachers' professional capabilities and efficacious interactions with the learners (Mogashoa, 2021). On the same breadth, teacher professional development offer teachers an opportunity to deepen their technological and pedagogical content knowledge (TPACK) (Long, Zhao, Li, Zhao, Xie & Duan, 2020) which assist them to be engaged with the learners in active pedagogical practices and learning (Darling-Hammond, Hyler & Gardner, 2017). The perceived barriers among others to this effect, may be the fact that school leadership lacks the competences, knowledge, and confidence of providing teachers with opportunities for professional developments (Chin, Ching, del Castillo, Wen, Huang, del Castillo, Gungon & Trajera, 2022). Broadly, the main challenge is that school leadership lacks the basic skills components of the 21st century (Piper, Oyanga, Mejia, & Pouezevara, 2017).

Whenever there are initiatives either from school leadership or from ordinary teachers, they are always met with slow uptakes (Hamlaoui, 2021). This challenge is mostly prevalent in most public schools that are located in rural settings and the previously marginalised communities continue with outdated traditional teacher-centric pedagogies due to a plethora of existing multiplicity and multifaceted complexities (Fargas-Malet & Bagley, 2022). For example, school leadership in rural setting spends a lot of time trying to build relationship with communities and local organisations (Harmon & Schafft, 2009; Nordholm, Nihlfors & Arnqvist, 2022) and less time focusing on professional related activities such as teacher professional development. Moreover, rural school leadership also has less time to provide both the teachers and the learners with technical training and support that entices learners to adopt advanced and digital technologies as witnessed in a case study carried out in South Africa (Mhlana & Twinomurinzi, 2021; Herselman & Botha 2014).

#### 2.6.2.2 Teachers' resistance to change

Teachers' resistance to educational change underpins the incapacity of teachers in creating learning spaces for the 21st century learning for learners. This is a barrier to transforming schools from traditional classrooms with concurrent teacher-centric practices to learner-centric pedagogies of the 21st century learning. According to Seffrin, Panzano and Roth (2009), a barrier

can be defined as a condition that hinders the adoption of a decision. This is an unprecedented challenge that can be attributed, for example, to the teachers' lacking digital resilience (Li, Huijser, Xi, Limniou, Zhang & Kek, 2022). Yet, there is a general notion that the only thing that does not stop is change. It is with us to stay (Fullan, 2020). Thus, resistance to change for any other reason can be classified as incapacity on the part of the teachers. Currently, in the era of the 21st century learning, the role of the teacher should have changed from controlling the class with rules to more collaborative approaches with learners in order to provide direction and support (Anderson, 2013).

In today's technology integrated learning space, learners set their targets and learn on their own with the role of the teacher as the facilitator of the learning process (Oblinger, 2006). If this is not the case, this will be detrimental to the creation of learning spaces for the 21st century learning for learners. However, it is also acknowledged that the contrary is also true. This became evident in Hamlaoui's (2021) study that used mixed method approach to study teachers in Tunisia. The findings revealed that, apart from extrinsic barriers such as the scarcity of educational resources (Mogachoa, 2021) in creating learning spaces, intrinsic barriers included low self-efficacy, and a feeling of unpreparedness (Graetz & Looney, 2020). This resistance is displayed notably by long serving teachers because of either being sceptical about the effectiveness of the new and expected learner-centric pedagogical practices or the lack of confidence in technology integration into the learning space. Overall, the literature seems to suggest that despite all the physical resources being made available for creating learning spaces for the 21st century learning in schools, the last leap is for school leadership to influence, especially teachers to embrace and collaboratively make the transformation a reality.

### 2.6.3 School managers' incapacity to create learning spaces

Incapacities to embrace change, especially in relation to new approaches to learning, are not limited to teachers in the classroom, but they also affect school managers. In view of the comprehensive definition of leadership as a process whereby, individuals influence the others to achieve a common goal (Northouse, 2018), school leadership must have advanced knowledge of learning spaces. In this case, the lack of this knowledge will render school managers incapable of directing, coaching and supporting (Hersey, 1975), creativity and innovations from teachers. This challenge is prevalent in rural schools that arise from features of rural contexts (Surface & Theobald, 2014). The literature seems to suggest that the lack of knowledge of learning spaces

and the context in which school managers execute their duties, can be perceived as their incapacity to create learning spaces for the 21st century learning for learners.

Equally important is the incapacity of school leadership in creating learning spaces that can be perceived as the lack and the misunderstanding of transformational leadership functions. The functions include school leadership helping teachers to develop their capabilities and contribute immensely and meaningfully to their innovative ways of creating learning spaces. In view of this function of school leadership, the lack of capability has a detrimental effect on setting the direction for transformation. School leadership should have transformational leadership skills if the creation of learning spaces for the 21st century learning will be a reality. According to Roesminingsih and Trihantoyo (2022), school leadership exhibiting transformational leadership qualities have the ability to generate new ideas, inspire and encourage teachers to initiate changes in schools. Apparently, school leadership incapacity in creating learning spaces can generally, be regarded as the lack of knowledge and understanding of their functions and activities in ensuring that transformation does take place in their schools.

Despite school leadership lacking the understanding of learning spaces, a myriad of rural contextual factors hinders the transformation of their schools into learning spaces for the 21st century learning for learners. According to Liu and Hallinger (2018), rural schools generally, have high teacher turnover, shortage of qualified teachers, inadequate infrastructure, and inadequate funds as some of the challenges that plague rural schools. Indeed, school leaders are compelled to take teaching loads due to the small size of rural schools and teacher turnover (Liu & Hallinger, 2018). Moreover, the material deprivation of rural secondary schools in particular, continues to cause a lack of leadership for change. Overall, these revelations seem to be constraints that are the underlying factors for incapacity of school leaders and school leadership in creating learning spaces for the 21st century learning for learners.

### 2.6.4 The impact of the 20th century traditional classroom design on the creation of learning spaces

The influence of initial design of the 20th century classroom cannot be divorced from the unintended practices that global education landscapes are experiencing to this end. Although Bautista and Borges (2013) argue that when we make references to the learning space, we cannot dismiss traditional classrooms (physical learning spaces) that end up exerting influence on

teaching and learning (Young & Cleveland, 2022). It is worth acknowledging that the simultaneous transition from traditional teacher-centric to learner-centric teaching and learning and the creation of learning spaces that support this 21st century learning is an insurmountable challenge. Indeed, there is no vacuum if the process is stalling, therefore, outdated traditional methods of teaching and learning will continue in exerting their influence in the current global educational landscape.

### 2.6.5 Parental engagement

Effective parental engagement in the affairs of the school has a significant impact on schools to prosper in any endeavour that school leadership is pursuing (Yulianti, Denessen, Droop & Veerman, 2022). For example, in the case of creating learning spaces for the 21st century learning, it is crucial that parents participate either directly or indirectly in the initial design and the implementation process throughout. According to Bøjer (2020), this parental engagement accounts for perceptions and expectations from parents. If this is the case, parents and their children can constantly navigate through various interactions to co-create informal learning spaces that best support self-directed learning even beyond schooling hours. It is on these grounds that Siahaan, Murniarti and Simbolon (2021) argue that it is critical for parents to act as companion for children to study at home. In that plight, parents must also be co-creating with children the best possible learning spaces that are conducive and safe for effective learner-centred and self-directed learning to take place after schooling hours. Notwithstanding this, the parents' voices are occasionally considered. In rural schools in particular, parental engagements, especially in creating a non-formal learning space, give parents opportunities to provide learners with the necessary resources (Myende & Nhlumayo, 2020).

However, there are challenges that school leadership is experiencing in performing the tasks mentioned in the paragraph above. This makes the creation of learning spaces to be too complex to surmount. The challenges include, among others, what emerged from a narrative inquiry by Ewing and Cooper (2021) in Australia. It emerged from that study that parents did not engage with schools unless there was a specific reason to. Noticeably, in the context of South Africa, these challenges are more prevalent in rural settings than in urban areas (Du Plessis & Mestry, 2019; Dube, 2020). Seemingly, rural conditions of multiple deprivations involving the lack of transport may be one of the challenges that rural parents are facing. Furthermore, school leadership in rural schools is grappling with the ripple effects of parents with low socio-economic status, the

disadvantaged (Jaarsveld & Van der Walt, 2018) and under-resourced rural schools (Chisango, Marongwe, Mtsi & Matyedi, 2019; Du Plessis, 2014; Omodon, 2022). Notwithstanding the low socio-economic status of parents in rural settings, Berman (2020) argues that it is compulsory for parents to play a critical role in the discourse of assisting learners in creating informal learning spaces in post-compulsory educational settings. Overall, the literature seems to suggest that since most parents are not eager to engage in the affairs of the school and to take much interest in their children's schoolwork simply means that these parents are abdicating their critical responsibilities to the schools. Indeed, the realisation of the 21st century learning that takes place anywhere anytime is impeded with unintended consequences such as the socio-economic conditions

### 2.6.6 Heterogeneous network challenges

The availability of heterogeneous networks for interacting digitally and non-digitally are vitally important in the creation of effective learning spaces in rural settings (Rohde, Müller, Ludwig, Stevens, Pipek & Wulf, 2022). The 21st century learning encompassing various models of distance learning requires internet connectivity. Distance learning models include, among others, e-learning, virtual and hybrid learning. However, they all need internet connectivity. According to Hughes and Morrison (2020), connectivity of the learning space must have good uninterrupted networks both locally and globally. Moreover, both scholars aver that connectivity should be wireless to allow learners to maximise physical mobility. Learners are enabled to get access to a large number of information sources in order to enhance learning spaces and learning process. According to Brown and Lippincott's (2003) understanding, the 21st century learning happens anywhere and at any time. However, heterogeneous networks are limited in rural areas, making it difficult to create various types of learning spaces. To this effect, Timmis and Muhuro (2019) conducted a participatory methodology study by using second year students from rural background as participants and co-researchers from three institutions of higher learning. One of their findings is that internet access in rural areas is far more limited in comparison with urban areas. The implications of this limitation undoubtedly, hinder different models of distance learning in rural settings.

### 2.6.7 Social relations involving teachers and learners

The effectiveness of innovative ways of creating learning spaces is also informed by social relations among the stakeholders (Badamas, 2022; Kahne, O'Brien, Brown & Quinn, 2001).

Social relations are a stepping stone for meaningful social interaction between learners and between learners and teachers (Neville, Novelli, Drury & Reicher, 2022). For example, in most developed countries such as Finland, new technology-enhanced school buildings were erected. However, in order to understand the dynamics of transformation in the case of new school buildings as physical learning spaces that support the 21st century learning, social relations between teachers and learners, as well as among teachers are an important contributing factor (Gila, 2022).

The importance of social interaction between teachers and learners cannot be under-estimated for the benefit of co-creating learning spaces for the 21st century learning. In this regard, Kokko and Hirsto (2020) conducted an ethnographic study in two Finish schools. The findings revealed the importance of social relations and interactions between teachers, interactions between learners and interactions between the learners and the teachers. These kinds of social relations with a strong support from the teachers, enabled learners to create learning spaces that suited their needs within the school premises. As a result, learners were further enabled to expand learning spaces outside the classrooms, as well as beyond physical school spaces. Similarly, Henao and Tatiana (2017) conducted a qualitative, case study design in Minnesota (USA) with twenty primary school children as participants. The findings concur with that of Kokko and Hirsto's (2020) in a sense that for a learner-centric learning space, the teacher must consult with learners in creating the learning space that meets the needs of the learners. Furthermore, on the same breadth, both Kokko and Hirsto (2020) argue that the pedagogies from one space cannot be transferred to another. They also found that interactions between teachers alone do not necessarily provide situations where learners will engage meaningfully in learning activities. The literature seems to suggest that social relations are critical lens for the effective creation and utilisation of learning spaces for the 21st century learning for learners.

In most studies related to teachers engaging learners to take an active role in the process of co-creating learning space, they are most probably in favour of this practice. Without ignoring the negative impact that social relations and interactions are causing to the much-needed good relationships between learners and teacher, more studies that are recent are in favour of this engagement and others (Caprara, Barbaranelli, Bandura & Zimbardo, 2000; Jadoon, Bukhari, Gilani, Ishfag & Ullah, 2022; Uwamahoro, Ndihokubwayo, Ralph & Ndayambaje, 2021). The significance of this engagement is that learners are empowered to expand the creation of the learning spaces outside of the classrooms and schools such as homes. This is advantageous in the

sense that it re-affirms an understanding that the 21st century learning takes place anywhere anytime that is made possible by necessary affordances being put in place. The affordances vary and include information communication technology (ICT) gadgets and internet connectivity. Thus, the creation of learning spaces has more to offer in the education landscape. The contributions of social interaction towards transforming the outdated traditional teacher-centric pedagogical approaches to learner-centric and self-directed learning to take place everywhere anytime have significant impact to this discourse. Of course, for whatever is seen to hinder this transformation can be given proportional attention for the negative impact that it poses to this discourse.

However, there are other findings from an exploratory qualitative study conducted by Godbold, Hung and Mathews (2021) in an Australian university with 61 participating students. One of the findings was that social relations that enabled the co-creation process of the learning space tend to cause internal and interpersonal conflicts. Internal conflict refers to a learner wrestling with his/her assumptions and beliefs, whereas interpersonal is between learners or between learners and teachers (Umar, Anas & Tadi, 2022). Generally, any transformation that is undertaken will always have emerging challenges that need to be addressed or mitigated. Whenever school leadership embarks on some activities, the challenges will come up. Such challenges are like a flipped side of the same coin, and therefore, must be taken into consideration for these challenges to be effectively addressed. To this end, Chuang and Lin (2014) argue that internal and interpersonal conflicts can be mitigated by expanding the nature of the relationship, thus, encompassing a range of elements such as continuing trust, cooperation, flexibility, support, reliability and commitments. Indeed, as much as learners and teaches are the key role players to this discourse, the responsibility of school leadership includes functions such influencing, supporting, mentoring and motivating both learners and teachers to ultimately find each other and work collaboratively. The overall evidence seems to suggest that the purpose of creating learning spaces will be achieved if learners are involved as active agents in co-creating, the use of the 21st century learning space and in addressing the challenges that may come into play.

### 2.6.8 Stimulating effects of COVID-19 pandemic on the creation of learning spaces

A stimulating effect of COVI-19 pandemic in terms of mitigating the spread of this virus has had a positive dimension. For instance, attempts to prevent it spreading has resulted in institutions finding new ways of continuing with teaching and learning processes despite the phenomenon of

national lockdown which negatively affected schooling (Azhari & Fajri, 2022; Reimers, 2022). There was a sudden shift from traditional teacher-centric face to face teaching to distance or online teaching and learning approach. Such a sudden shift has posed numerous challenges for the majority of rural schools in developing countries, including South Africa (Bhengu, 2021). However, in all the developed countries such as New Zealand, Finland and Australia (Ewing & Cooper, 2020) to mention a few, innovations toward the creation of learning spaces that supported the out-of-school informal learning were instituted as alternatives to face-to-face engagements.

Learning spaces are created through social practices that are influenced by the contexts in which schools are located (Nasrin & Biswas, 2022). In this regard, Daimary's (2020) quantitative study that used questionnaires in 50 India's secondary schools was able to identify challenges to the 21st century learning spaces. The findings revealed huge challenges especially in rural areas that ranged from a lack of distance learning resources, co-operation of teachers and learners and the use of Information Communication Technology (ICT) by skilled teachers. Overall, evidence suggests that the impact of context has ripple effects on the creation of learning spaces. Therefore, this revelation implies that even if the challenges and contexts may be perceived to be similar, it does not necessarily mean that the strategies and approaches to address them will be the same as well.

### 2.6.9 Complexity of rurality in creating 21st learning spaces

The complexities emanating from rural contexts hinder the creation of 21st century learning spaces in rural schools. Therefore, learning contexts differ; hence, there are schools that are located in urban and township areas whilst others are found in rural settings with multiple deprivations (Maringe, Masinire & Nkambule, 2015). These rural schools provide educational opportunities to learners from disadvantaged rural communities. There are myriads of rural contextual factors that underscore complex rural settings. According to these scholars (Maringe, Masinire & Nkambule, 2015), multiple deprivations connote the confluence of factors that include poverty, low socio-economic status (Jaarsveld & Van der Walt, 2018), and under-resourced environment (Chisango, Marongwe, Mtsi & Matyedi, 2019; Du Plessis, 2014). These scholars among others are bringing to the fore the complex nature of rurality to be considered by school leadership and teachers when creating learning spaces for the 21st century learning for learners.

Rural schools suffer from these complex rural environments, as parents in rural areas cannot afford to supplement the shortfalls in the education department's financial allocations in terms of quintile ranking system. Most of rural schools belong to Quintile 1 up to Quintile 3, and are NO-Fee paying. This is the opposite of their more affluent counterparts in Quintile 4 and Quintile 5 in many urban schools. Having an eagle eye view of what happens in rural schools, it is noted that school leadership has an increased responsibility to re-imagine the learning spaces for the 21st century learning. It is noted that the creation of learning spaces that best support the 21st century learning in rural settings is direr due to the challenges and dynamics that face these communities. Overall, the evidence highlights the significant impact of rural contextual factors on the attempts to create learning spaces for the 21st century learning. Generally, most secondary schools that are located in rural areas have unique complexities that are hardly applicable to their urban counterparts. Although the term rurality does not have one common definition, there is convergence among scholars that it is where disadvantaged communities with higher levels of multiple deprivation are mostly located (Relova, Joffres, Rasali, Zhang, Mckee & Janhjua, 2022). These rural secondary schools are disadvantaged in the sense that the nature of the curriculum they are supposed to provide is characterised by insufficient human and physical resources phenomenon (Chisango, Marongwe, Mtsi & Matyedi, 2019; Zenda, 2020). The nature of the curriculum in secondary schools requires teachers with specialised training on subjects they teach, and that relevant educational resources are provided. However, this is not usually the case. There is high prevalence of the shortage of well-qualified teachers due to unfavourable living conditions in rural communities (Du Plessis & Mestry, 2019).

A corpus of research reveals a persistent lack of these resources in rural secondary schools. In addition, people in these communities are experiencing a lack of access to socio-economic amenities, efficient transport system and electricity supply that can sustain rural development (Cristobal-Fransi, Montegut-Salla, Ferrer-Rosell & Daries, 2020; Du Plessis, 2014). Because of all these factors, rural schools suffer the consequences relating to the dearth of these facilities and services. This is despite the fact that, in terms of 21st century learning spaces, learning takes place everywhere and anytime. Therefore, parents need to provide their children with technological gadgets, internet data and transport costs to areas where connectivity is accessible, and where electricity supply is reliable. As it has been mentioned previously, the contexts in which schools are located have an impact on the ways in which learning spaces are created. Psyché, Daniel and Bourdeau (2020) argue that a relationship exists between innovations of the 21st century learning spaces and the contexts in which learning occurs. Since this is the case, the implications are that

strategies of creating learning spaces differ from one context to another. Therefore, there are no designs principles that cater for all contextual conditions in a 'one size fits all' format. However, at any given time, a learning space for the 21st century learning is designed to optimise the practice of active learning anywhere and anytime (Talbert & Mor-Avi, 2019).

A situation where learners in rural settings could realise self-centred, individualised, as well as personalised will remain a pipedream if factors that contribute to multiple deprivations are not urgently addressed. Recent studies such as that conducted by Dube (2020), attest to the challenges of rurality in South Africa, especially during the time of COVID-19 pandemic. Some of the findings included the shortage of online learning materials, unavailability of network and the lack of computer skills among some rural teachers (Dube, 2020). Furthermore, in their findings, Du Plessis and Mestry (2019) identified various factors that impede the creation of the 21st century learning spaces. The impediments include the lack of qualified teachers, poor infrastructure and facilities. Similar views are shared by other scholars (Msuya, 2022; Tintoré, Cunha & Alves, 2022). However, despite rural schools experiencing a multiplicity and multi-faceted challenges, there are also successful stories to share within rural communities.

Themane and Thobejane (2019) conducted a qualitative case study that came up with different conclusions. They used observation and interviews as instruments in a sample of four rural schools located in Limpopo Province of South Africa. Based on the findings, Themane and Thobejane (2019) concluded that rural teachers in the study, went an extra mile in their efforts to mitigate contextual challenges, and their interventions made a difference. According to Themane and Thobejane (2019), teachers who work collaboratively with others share physical resources that form part of transformative pedagogies. Having an eagle eye view of what happens in rural schools, it is noted that school leadership have an increased responsibility to re-imagine learning spaces for the 21st century learning. The overall picture that emerges from different scholars suggest that teachers who show resilience are those who use different strategies to mitigate the challenges that they encounter, including the creation of physical learning spaces.

### 2.6.10 Transition from formal to informal learning spaces

The transition from formal to informal learning spaces without sets of guidelines or specific professional development is not insurmountable. Despite a corpus of studies that provide a positive outlook of informal learning spaces (Meyers, Ericksson & Small, 2013; Viberg et al.

2021), there has been little serious attention to the contrary. There are conceptual underpinnings expressed by different scholars in relation to the transition from formal to the informal learning spaces that must be understood. Various interruptions take place during the transitions from formal to informal learning spaces. According to Adedeji and Soykan (2020), interruptions that occur in informal learning spaces tend to draw the learners' attention away during the learning process. Some scholars highlight the challenges relating to the advanced technological developments and the reality of the learners being able to access social media. Ironically, today's challenges are primarily, the unavailability of appropriate devices and internet connectivity bandwidth that can be used for interactive multimedia resources (Herczeg, Ohlei & Schumacher, 2021). The literature seems to bring stakeholders attention to the interruptions that they encounter when transitioning from formal to informal learning spaces that are created (Pöntinen, Dillon & Väisänen, 2017; Warburton & Perry, 2022; Zajac, Randall & Holladay, 2022).

Most interruptions of transition from formal to informal learning spaces are caused mainly by unreliable supply of electric power (Aweke & Navrud, 2022; Rajbhandari, Marahatta, Shrestha, Gachhadar, Thapa, Gozale-Longatt, Guerrero & Korba, 2022)**.** Almost all technological devices rely on electricity power supply to function. Notably, there is a prevalence of the lack of reliable electricity supply that is common in rural areas, and this disrupts distance learning programmes, especially during the closure of schools as a result of COVID-19 pandemic (Makira & Owino, 2021). Without the availability electricity supply, informal learning spaces cannot address the challenges of equal access to education. The literature is dominated by the discourse around the multiplicity of challenges that persist in rural environments, and school leadership has to grapple with such challenges on continuous basis (Mansor, Hamid, Medina, Vikaraman, Wahab, Nor & Alias, 2022; Nordholm, Nihlfors & Arnqvist, 2022). Of course, these challenges hinder innovations that accompany the creation of learning spaces for 21st century learning for the learners.

### 2.6.11 The two-tier schools in South African education system

In South Africa, variations of spaces for learning are closely associated with the continuing existence of two distinct tiers of schooling systems. The first tier is that of the historically privileged schools from affluent communities (Van Jaarsveld & Van der Walt, 2018). These communities are still advantaged and thus, are advanced in terms of creating learning spaces for the 21st century learning. These communities are able to provide sufficient financial resources to

schools and parent-school-community partnerships are highly functional. The second tier is the historically disadvantaged schools (Jaarsveld & Van der Walt, 2018) that are mainly in the townships and rural communities, and these were previously marginalised (Du Plessis & Mestry, 2014; Lekgothoane & Thaba-Nkadimene, 2019). Mostly, these schools lack the capacity to operate in the same way as those schools that were historically privileged because of challenges that are attributed to their contexts (Kerkhoff & Makubuya, 2022; Liu, Liu & Wang, 2022).

### 2.6.12 Socio-economic factors affecting the creation of learning spaces

Parents with low socio-economic power are unable to afford financial and materials resources that are required for the 21st century learning. Therefore, their children are disadvantaged because of that. These children become vulnerable and are left behind in terms of collaborating with others for online learning (Adedoyin & Soykan, 2020). Parents are unable to provide learning affordances that include internet connectivity and technology gadgets. The issues raised above and elsewhere in this thesis are consistent with research findings from a study conducted by Fishbane and Tomer (2020). Emerging from this study is that learners with no internet access or low socio-economic status encountered additional challenges to continue with out-of-school learning activities during COVID-19. Obviously, rural areas tend to have high levels of poverty and fewer job opportunities compared to their urban counterparts (Mueller, McConnell, Burow, Pofahl & Merdjanoff, 2020). The information presented above suggests that although a corpus of studies points to the fact that more learning takes place in an informal learning space, adversities hinder their success.

### 2.6.13 Infusing technology in the 21st century teaching and learning

The infusion of technology in teaching and learning is undoubtedly a centrepiece of the 21st century learning (Sprague, Williamson & Foulger, 2022). Despite this reality, there are challenges relating to the lack of knowledge by School Managers and teachers when it comes to infusing advanced and digital technologies in teaching and learning. Nevertheless, there is a variety of affordances for the fusion of formal and informal learning spaces. Affordances are understood as those aspects of learning spaces that enable or constrain the kinds of interactions that subsequently take place (Greeno, 1994). That said, the implications of the lack in providing affordances are a challenge that impedes the creation of learning spaces and the 21st century learning for learners.

The infusion of digital technologies specifically, has advantages that we need to take note of. Hall (2009) is of the view that it is critical to deploy a mix of school and personal technologies which should enable learners to exercise choices in terms of access and control of learning process. In this regard, the key question is not the 'what should be learned' but, the 'what kinds of tools and things might learners want to be available and in contact with to learn' (Hall, 2009). Hall's (2009) question implies that the kinds of teaching and learning tools that are made available to both teachers and learners must be of value to successfully create a learning space for the 21st century learning. Nonetheless, the value of infusing digital technologies in teaching and learning is the crux to formal, non-formal and informal learning spaces. Carraro and Trinder (2021) aver that the affordance of digital technology integration in learning ensures that learners accumulate learning experiences in a multiplicity of in, and out-of-class learning spaces. In this regard, the infusion of digital technologies in learning is not only the responsibility of the school but also, parents are expected to do likewise for learning to take place everywhere anytime. However, one of the findings from the study conducted by Campbell (2020) in Scotland, is that technology provisions is under-utilised. Even in some of the first world countries, this challenge exists (Hobbs & Hawkins, 2020). Literature seems to suggest that the constraints related to technology integration in learning spaces will hinder the expansion of the 21st learning to informal learning spaces. Above all, relevant resources made available do not necessary mean that the infusion of formal and informal learning spaces is definitely intact.

Advanced technologies that include but not limited to social media, computers and communication devices are recognised as catalyst for migrating to learner-centric teaching approaches (Assan & Thomas, 2012). The infusion of these advanced technologies in teaching and learning enable learning to take place anywhere, anytime in either physical or virtual learning space in the 21st century (Dash, 2022). This is unlike during the past centuries, where the emphasis was only on traditional (formal) classrooms in which teaching and learning was a teacher-mediated transfer of information for the learners to passively absorb and memorise (Sumardi, Rohman & Wahyudiati, 2020). The difference with t the traditional practices is that the 21st century is characterised by unlimited access to knowledge (Boyinbode & Akintola, 2008; Oktaputriviant & Rizqiana, 2022; Yahiya, Ahmad & Jalil, 2010). Indeed, the 21st century learning enhances learner self-centred learning thus, proving learners with opportunities to develop the much-anticipated skills for knowledge economy (Häusermann, Pinggera, Ares & Enggist, 2022).

In general, the function of leadership is a critical aspect for the school as an organisation to thrive, particularly, when school leadership plays an important part within the creative and innovative teaching and learning process (Rasool, Jan & Tahir, 2022). It is critical that School Managers, teachers and learners maximise the infusion and the effective use of advanced and continuing evolving technologies in the 21st century teaching and learning (Defrianti & Iskandar, 2022). However, there are ineffective leadership related factors that have a direct negative impact on the teachers' efforts in infusing advanced technologies in teaching and learning for the 21st century (Mhlana, Chipangura & Twinomurinzi, 2021). According to Longenecker and Longenecker (2014), ineffective leadership arises when a leader fails to take initiatives and implement successful transformation. Ineffective leadership of the principal, in the case of this study, is characterised by underlying factors such as the failure to explain the kinds of transformation that is necessary, the desired outcome, the lack of trust among School Managers and support to teachers, the lack of teamwork and unclear roles, as well as performance evaluation of progress made towards the desired outcomes (Longenecker & Longenecker, 2014). For example, the impediments to infusing advanced technology in secondary schools includes weak infrastructure, limited access to the internet, the lack of relevant software and the lack of skilful manpower among others (Okpako & Agbigbe, 2020).

### 2.6.14 The impact of physical characteristics of school buildings on creating learning spaces

There is a plethora of evidence that suggests the existence of the impact of physical characteristics of school buildings and spaces between them on the efficiency of learning spaces (Barrett & Zhang, 2009). School buildings that are fit-for-purpose are perceived to be inspiring in terms of providing functional spaces that are adaptable for the forever evolving teaching and learning needs (Campbell, 2020). For school buildings to be effective learning spaces, they must ensure that learners and teachers enjoy satisfactory levels of flexibility, furniture settings, size, acoustics, lighting and air quality (Shield, Greenland & Dockrell, 2010), to mention a few. If this is not the case, it is argued that learning spaces do not act as platforms for learners and teachers to collaborate, and for creativity, as well as problem solving to occur (Lose-Munro, 2021). The implications, therefore, can be dire.

## 2.7 Mitigating strategies for addressing the challenges encountered

In any creativity or innovations that is introduced in pursuit for any transformation in an organisation such as schools, there will always be challenges that will be encountered, and such challenges have to be addressed. Transforming traditional classroom into learning spaces for the 21st century learning is bound to encounter challenges as well. This is even more challenging because it requires concurrent teacher professional development that will facilitate a shift from teacher-centric to learner-centric pedagogical practices (Basavaiah, Anthony & Patil, 2022; Young & Cleveland, 2022). However, if school leadership can provide teachers with the necessary resources and make them available over time, this will make radical transformation more, rather than less likely to occur (Kirk, 2009). Apart from the provision of resources, there is a plethora of other factors for consideration in order to address or mitigate the challenges that are experienced when transformation takes place. Measures that school leadership can use include, among others, effective utilisation of limited resources and the enhancement of parents-school-community partnerships (Agayon, Agayon, Pentang, 2022). These measures will support the transition from formal and informal learning (Carraro & Trinder, 2021). In addition, by infusing advanced technologies in learning spaces (Neill & Etheridge, 2008), and the alignment of pedagogies to the 21st century learning (Mulcahy, Cleveland & Aberton, 2015; Herczeg & Schumacher, 2021), teachers and learners can co-create a learning space.

Having an eagle eye view of what happens at school, is credited for enabling school leadership to exercise increased responsibility in terms of re-imagining learning spaces for the 21st century learning. When school leadership is fully involved in that regard, learning conditions are believed to be in such a way that teachers and learners who use learning spaces would be able to engage in learning with all the tools, the documents and other artefacts found in it (Darcy, 2016; Naude & Meier, 2019; UTS, 2016; Zydney & Warner, 2016). Teachers as key role players need guidance, continuing professional development and support for the realisation of the 21st century learning outcomes. Central to all these activities and others at school levels, is school leadership (Naude & Meier, 2019). Leadership within the school plays a critical role in establishing a supportive environment for creativity (Beghetto & Kaufman, 2014). Therefore, it is important that school leadership is always aware of this kind of environment and should be enhancing it daily to ensure that the efficacies of learning spaces are not undermined, and that they influence behavioural change that clarify as to who does what and how (Kariippanon, Cliff, Lancaster, Okely & Parrish, 2018). Therefore, it is always expected that school leadership should perpetually search for what

and how the stakeholders do in terms of aligning the learning spaces with what is expected in relation to broader educational outcomes (Kariippanon et al., 2018).

The broader educational outcomes include, among others, learners' mastering subject content knowledge and concurrently, developing the much needed 21st century skills. It is therefore, incumbent upon school leadership to create an alignment between teaching, learning spaces and the school organisation (Bøjer, 2021). Overall, the evidence seems to suggest that school leadership must always be aware of their increasing responsibilities that must be taken with due diligence in order to achieve the desired outcomes. Nevertheless, school leadership has fundamental tasks to do if the overall transformation of schools from traditional teacher-centric classrooms to the 21st century learner-centric learning spaces are to be realised (Davis, 2022). The fundamental tasks include activities that will influence the attitudes, beliefs and values of all relevant stakeholders, and thus, redirecting their behaviours, expertise and activities towards a new paradigm of the 21st century learning (Burrell, Hyman, Michaelson, Nelson, Taylor & West, 2022). The successful execution of these fundamental tasks, among other things, is underpinned by the assumption that school leadership is endowed with the capability to inspire, empower, support and direct the energies of all stakeholders to achieve the desired outcomes (Jacobs, Kiniger-Passigli, Šlaus, Zucconi & Brunnhuber, 2020).

The other outcomes that school leadership must ensure, include the ability of teachers and learners to co-create learning spaces that best support effective learner self-directed and collaborative learning. Overall, the evidence seems to suggest some of the fundamental tasks that school leadership must execute so that individuals play their meaningful role in creating learning spaces that best support the 21st century learning. It is important to note that in the 21st century learning, people are able to put theory into practice in the case of teaching and learning activities. With this understanding, teachers who fit in this category are enabled to align their realities with broader education outcomes of the 21st century learning. Importantly, the teacher becomes the key factor to rethink about reconfiguring their pedagogical practices in order to shift the didactical approaches of the industrial age, teacher-centric instructions to constructivist approaches to learning (Jonassen & Land, 2012; Prain et al. 2013). This section focuses on the discussion about mitigating strategies for addressing the challenges encountered in creating 21st century learning spaces. It is thus, important that I highlight what some of these strategies I discuss here are. The discussion focuses on none strategies and these; Effective utilisation of limited affordances; Fusing formal and informal learning spaces; Infusing advanced technologies in learning spaces;

Aligning current pedagogies with 21st century learning; Teacher empowerment and support; Involvement of the learners in co-creating learning spaces with the teachers; Building interactive relationships between the learners and the teachers; Promotion of effective parent-school-community partnerships; School leadership promoting contextually relevant learning modalities, and they are discussed next.

### 2.7.1 Effective utilisation of limited affordances

There are challenges relating to effective utilisation of affordances, especially, in rural secondary schools where the affordances are limited (Mukuna & Aloka, 2020; Nyimejie, 2018). These challenges emanate from the barriers, including basic technical skills that minimise access to affordances such as technology gadgets in learning spaces. In most cases, the negative impact stems from reduced interaction between teachers and learners, as well as the lack timeous feedback from the teachers to the learners (Diaz, Garcia & Cano, 2019). Furthermore, these scholars allude to the fact that the challenges are also experienced when teaching strategies have not seriously considered the power of the evolving and emerging technologies. In addition, the non-alignment of the technology-based learning with the teaching approaches renders the use of technology counterproductive. However, the effectiveness of utilising affordances can be through specific priorities and policies to programmes once they are in the schools (OECD, 2013). The effectiveness depends on the prevailing school leadership and what it prioritises. The considerations include requisitioning resources that match the learners' needs that are context embedded. School leadership on one hand, must ensure that resources are actually used to support teaching and learning (Lucy, Emmideme & Sylvester, 2022). On the other hand, educational affordances may be scarce, but their distributions in the schools must be organised in such a manner that they create a conducive environment for effective teaching and learning (OECD, 2013). In this regard, the literature seems to bring another dimension of what measures may be considered for the effective utilisation of all the available and accessible educational affordances in a school setting (Ligado, Palattao, Gamis, Felix & Bautista, 2022).

Effective utilisation of all educational affordances is a common denominator in ameliorating the impact of the interplay of contextual and professional dimensions (Ligado et al., 2022). According to Scanlon, Calderón and MacPhail (2021), the professional context plays a critical role in the process of developing teacher and learner agency in supporting sustainable change that involves affordances. In this regard, teachers in particular, are understood to have the capacity and are in a

better position to ultimately understand and learn how resources can be used to maximise their effectiveness to broader schools and educational objectives. Thus, teachers are 'agents of change' (Priestley, Biesta, Philippou & Robinson, 2016; Scanlon, Calderón & MacPhail, 2021) as they constitute the core of the team that collaboratively change the school vision and mission into practices. Hence, the school plays a dominating role which is embedded in the effective utilisation of all educational affordances for the 21st century teaching and learning (Herczeg, Ohlei & Schumacher, 2021). Overall, the literature is suggesting that teachers are the cornerstone for ensuring effective utilisation of all the affordances in schools.

### 2.7.2 Fusing formal and informal learning spaces

One of the strategies for mitigating the challenges encountered in creating 21st century learning spaces entails fusing formal and informal learning spaces. The impact of fusing informal to formal learning spaces is informed by teaching and learning activities which interlink formal and informal learning activities. The fusion of formal and informal learning requires Wi-Fi facility for internet connectivity. The school as a juristic person within the South African context (Chitimira & Hamadziripi, 2022) is responsible for providing internet accessibility and other educational resources through its functionaries. In considering the South African context, the functionaries in schools are natural persons that are responsible for school governance, including the school governing body (SGB) and the school principal (Tabe, Van Wyk & Ndebele, 2022). The provision of connectivity in schools and effective utilisation of these facilities and others, enable both teachers and learners to access varied resources (Hall, 2009). Implicitly, this practice may result in learners getting inspired to create informal learning spaces outside normal school contact times. The literature suggests that informal learning spaces within the school premises, are characterised by varied affordances in place, and these can enrich informal learning within and outside of formal schooling environments (Carraro & Trinder, 2021; Pöntinen, Dillion & Väisänen, 2017).

### 2.7.3 Infusing advanced technologies in learning spaces

In the previous sections and Chapter One, I emphasised the importance of infusing advanced technologies in learning spaces. Advanced technologies in teaching and learning in the 21st century constitute an important factor. This is consistent with a general international understanding that learning can take place anywhere, anytime, and in either physical or virtual learning spaces in the 21st century. With information now readily available through advanced

technological devices, learning is made possible anywhere and anytime (Boyinbode & Akintola, 2008; Yahiya, Ahmad & Jalil, 2010). Indeed, the 21st century learning enhances learner self-centred learning; thus, providing learners with opportunities to develop the much-anticipated skills for knowledge economy. Unlike during the past centuries, where the emphasis was put on traditional (formal) classroom as the main space for learning, the 21st century makes it possible for learning to occur anywhere and anytime. The new technologies have brought about a paradigm shift from teacher-centred traditional classrooms to learning spaces for the 21st century learning where learners are put at the centre. The 21st century learning is viewed as a multimodal practice that involves more of learners' self-directed learning and less of teacher-mediated transfer of information to the learners for them to passively absorb and memorise (Sumardi, Rohman & Wahyudiati, 2020). The emphasis is on teaching approaches that allow more of learners getting information on their own, using a variety of affordances that make the 21st century learning different. Drawing from this kind of learner self-directed learning, one can conclude that learning spaces for the 21st century learning, are therefore, created to foster multimodal types of learning. Overall, evidence seems to suggest that the efficacy of the 21st century learning is realised by infusing technology in teaching and learning.

### 2.7.4 Aligning current pedagogies with 21st century learning

The 21st century learning is conceptualised to be learner-centric and self-directed learning that takes place anywhere, anytime (Oblinger, 2006; Tandamrong & Parr, 2022). For this type of learning to be a reality, the alignment of pedagogical practices is critical. School leadership and teachers must have knowledge of different pedagogical approaches in advancing prospects of the 21st century learning. With vast amount of knowledge regarding learning spaces from different scholars and research studies, the reasons that necessitate transitions from traditional teacher-centric teaching and learning to the 21st century learning are critically important. It is important to note that 21st century learning spaces are created in order to enable diverse and effective approaches to teaching and learning to take place (Kokko & Hirsto, 2021; Oblinger, 2006). The expectation is for learners to develop 21st century skills that enable them to participate meaningfully in the highly intensive knowledge-based global economy (Powell & Snellman, 2004; Punie, 2007). The 21st century critical skills include among others, communication, collaboration, creativity, critical thinking and problem solving (Aydeniz, 2017; Campbell, 2019; Van Laar, Van Deursen, Van Dijk & De Haan, 2020; Yulianto, Pramudya & Slamet, 2019). Endeavours to create learning spaces that support the 21st century learning are made possible by

pedagogical practices that are aligned with learner-centred approach and the provision of the necessary learning resources. Overall, the evidence seems to suggest that pedagogical practices must be informed by the skills that learners must develop in the learning process.

The resources provided are informed by their relevance to the type of learning modality that the learning space is designed to support. Equally important is the re-alignment of pedagogical practices with the learning spaces that are being created with the aim of promoting 21st century learning. With that said, I must emphasise that a variety of approaches in creating learning spaces for the 21st century can therefore, be designed for blended, mobile or flexible mode of learning. Blended learning is the fusion of online and face-to-face contact sessions with learners and teachers (He & Zhao, 2020; UNESCO, 2016). Mobile learning refers to the use of mobile devices and services, including smart phones, tablets and mobile instant messaging services for educational personnel to use outside the classroom environment as part of informal learning (Crompton, 2013). Flexible learning may require the re-arrangement of furniture in order to suit a learning activity (Neill & Etheridge, 2008). Seemingly, with the different variations of learning, schools have no option but to create learning spaces that enable learners to develop 21st century skills when the required resources are provided.

### 2.7.5 Teacher empowerment and support

Teachers are the most important cornerstones and are also change agents for transforming outdated traditional teaching and learning practices to that of the 21st century (Varpanen, Laherto, Hilppö & Ukkonen-Mikkola, 2022). Viewing transformation through the lens of agency, teachers may be able to make practical adjustments when faced with unexpected circumstances or evolving realities of everyday life in schools because change is relatively constant (Heminway, 2022). Teachers need empowerment strategies from school leadership, but these should be spearheaded by the principal who is able to enhance communication, school functioning and teacher autonomy (Calisici & Kiral, 2022). This activity may open various development paths for other teachers that will ensure a certain degree of teacher autonomy, and expeditious creation of learning spaces with efficiency (Kim & Beehr, 2022). The kind of support mechanisms must be designed in a manner that enables teachers to mitigate the effects of challenges emanating from creative and innovative strategies for creating learning spaces (Boice, Jackson, Alemdar, Rao, Grossman & Usselman, 2021).

All teacher creativity and innovation initiatives are preceded by a well-articulated rationale behind this global drive to create 21st century learning spaces that goal-oriented school leadership must embrace (Ruloff & Petko, 2021). The main tasks of school leadership, among others, involve conducting staff meetings and developments for capacity building (Leithwood & Riehl, 2003). The main objective is to empower and support teachers to use innovative skills within a framework of teacher autonomy when interacting with learners. The expectations from school leadership are to encourage teachers, motivate and inspire them to share their experiences in co-creating learning spaces with learners. Ultimately, teachers are empowered to create and enhance a collaborative work culture in schools (Bøjer, 2020). The support that must be given to teachers will differ depending on the needs of teachers and learners (Ungar, 2016). The evidence is apparently suggesting that school leadership works with others to create a shared sense of purpose and direction of how the learning space can be created.

Teachers are key role players with unwavering capacity to transform previous routines of established traditional teaching and learning practices to pedagogies of the 21st century that promote learner-centric learning. Despite the emergence of 21st century learning spaces, there are still teachers who advocate a particular way of collaborative culture by limiting their autonomy with learners, and to adhere to collective decisions towards a shared vision of the school (Hargreaves & O'Connor, 2017). Even in the 21st century, teachers still have power over learners to reconfigure how physical learning spaces are used. On the same breadth, learners are encouraged and supported to co-create learning spaces by choosing furniture and workstations for collaborative learning (Brøns, 2021). Therefore, it is evident that literature suggests different behavioural practices which shift from the old order to the new approaches that are geared towards creating learning spaces that best support and enhance the 21st century learning.

### 2.7.6 Involvement of the learners in co-creating learning spaces with the teachers

Learners are at the centre of all the teaching and learning activities that are taking place in schools. It is critical that they are involved as core participants in the design principles of learning spaces and their creation. Hence, they select spaces for learning based on their own requirements (Harrop & Turpin, 2013). Some learners may prefer collaboration in small groups or others learn as individuals in a quiet space with no distractions. Their involvement at secondary school will inculcate a sense of ownership and control of their learning that is a contributing factor in adapting to the demands of the 21st century learning (Reeve & Cheon, 2021). It is worth acknowledging

that the objectives of learning spaces cannot be fully achieved if users are not aware of the kinds of support that school leadership are failing to provide. In personalising teaching and learning and the use of space happened to be the choice that teachers offer learners in the context of learning. Thus, practice is meant to promote learner-centric inquiry-based learning (Madden, Wilks, Maione, Loader & Robinson, 2012). Teachers co-construct with the learners, personalised learning programmes, and the independent use of devices becomes a common practice by the learners. The way that the space is used takes a form of diverse learning by using new learner-centred learning approaches (Müller & Mildenberger, 2021). Learners are given opportunities to choose topics of their own interest and use teacher's guidance to achieve learning objectives (Edupedia, 2018). In congruence with this undertaking, Cofer (2000) avers that the preferences by learners for a variety of learning activities and settings are considered alongside those of the teachers. Apparently, this is a clear indication that effective learning space is that which is co-created by teachers and learners with preferred learning activities.

In the case of high levels of motivation of learners, the contributory elements associated with it are personalisation, choice and flexibility of the learning space as opposed to passivity which is associated with traditional classrooms. Personalisation of learning is reliant on trust and the way in which the teacher facilitates learning, and increases the potential of a learner. The efficacy of personalisation is enhanced when the learning space that is created is adapted to the 21st century learning styles of learners (Cofer, 2000; Qazza, 2021). With regards to learning styles, they can be described broadly as a tendency of a specific feature to be used by learners during the learning process (Matzavela & Alepis, 2021). Learning styles bear aspects such as personality, processing of information, social interaction and the preferred medium of learning (Ab Hamid, Awang, Alias & Shahdan, 2019). Drawing from what emerges from literature is the overall evidence that seems to suggest that there are various aspects of interconnected features and the personalisation of learning that must be considered if learning spaces for the 21st century learning, are to be effective.

### 2.7.7 Building interactive relationships between the learners and the teachers

The importance of relationships between staff and between staff and learners are perceived to be the key factors to the efficacy of learning spaces in supporting the 21st century learner-centric learning. The benefit of these relationships is the increase in the reflectiveness of practices (Garnett, Kervick, Moore, Ballysingh & Smith, 2020). This in turn, affords the teachers opportunities to review their pedagogies that will promote cooperation, fruitful interactions and

reduce tensions amongst learning spaces' users (National Education Association, 2019). The relationships can be escalated to a learner-teacher co-creation of learning spaces, as well as teaching and learning (Bovill, Cook-Santher, Felten, Millard & Moore-Cherry, 2016). The literature seems to reinforce the fundamental aspect of building relationship among different personnel towards achieving the common goal. There are advantages when teachers and learners co-create learning spaces. According to Bovill (2020), co-creation has implicit advantages in terms of creating deeper understandings and relationships between learners and teachers and between learners themselves in a school setting. Lundström, Savolainen and Kostiainen (2016) conducted a qualitative case study design to study how co-created ideas are actualised. So, learning spaces that meet the needs of the users at all levels of practical, emotional and infrastructural, increase their usability and efficacy (Lundström, Savolainen & Kostiainen, 2016). Apparently, the literature is providing school leadership with an important understanding of other measures of sustaining the efficacious use of learning spaces for the 21st century learning for learners.

Bovill (2020) argues that some teachers prefer autonomous control of teaching and learning rather than taking a risk of uncertainty of co-creation endeavour of the learning spaces. This argument seems to be a drawback from the expected transformation in the education sector. In view of the above information, school leadership with output-oriented agenda have the responsibility to allay such fears of uncertainty among the teachers. It is important for school leadership to take a standpoint, not only on 'what works' with regard to specific leadership practices but also on 'what works in which context' on the bases of multilevel analytical approach in addressing unexpected challenges (Kemethofer, Helm & Warwas, 2022). This seems to be a clear indication that the context has an influence in the behavioural practices of school leadership.

### 2.7.8 Promotion of effective parent-school-community partnerships

Parents-school-community partnerships have a contributing effect to the affairs of the school when channelled properly (Flores & Perez, 2022). Parent-school-community partnership becomes more significant with an understanding that the 21st century learning takes place anywhere, any time (Oktaputriviant & Rizqiana, 2021) when parents and community collaborate with schools to provide their support in creating informal learning spaces, beyond the school contact time (Flores & Perez, 2022). In terms of enhancing and reinforcing this partnership, a safety net for the learning space beyond school contact time will be enhanced. For this to happen, Nair (2014) argues that it

is the responsibility of the school to educate the local community and parents about the changes in education and the expectations from them. Indeed, school leadership understands the needs of the school and what contributions from parents and communities are required the most.

Expectedly, school-based initiatives are the responsibility of school leadership that must come with a plan of action of how parents and the community can be influenced to take meaningful ownership of learning of their children. With regards to how parents and community can be involved, SEDL (2000) avers that in order to involve hard-to-reach parents and community members, the strengthening of societal tiers with the community leaders through commitment, build relationships with them and developing trust will be a starting point. In essence, this motion minimises the negative attitude and its impact to the schooling environment that normally comes from the parents and the community at large who perceived to be kept at the periphery by schools (Durack, 2022).

Parental and community perceptions can change if they are given opportunities to be actively and meaningfully involved in the schooling affairs (Larios & Zetlin, 2012). Thus, the blurring of boundaries between activities outside and within school premises will result in schools having more benefits than before. SEDL (2000) argues that there are different strategies for parent-school-community partnership to be a reality. There are five strategies for effective parent-school-community partnership. Firstly, school leadership should know the community by talking to individuals who are in leadership positions within the communities, including churches, cultural foundations and others about what educational issues the community is concerned about. The information gathered will form part of the plan moving forward. Secondly, school leadership must be strategic in reaching out directly to parents such as neighbourhood walks, create a school newsletter and invite parents to school events. A third strategy will be that school leadership should provide help to the teachers to interact and engage parents in most school activities in order to strengthen partnership. This can be achieved by firstly understanding the community's culture and attitudes about public school and therefore, develop an outreach plan collaboratively with teachers. It is important that school leadership bridges the gap between families, communities and schools. This is a fourth strategy that can be used to designate a room for parents to meet with teachers for school and educational related matters.

Lastly, from time to time, school leadership must evaluate parents and the community engagement efforts for further improvements, regarding the efficacies of the strategies. In broad terms, the

school benefits from the increased safety to the learners and teachers, as well as the security of school infrastructure and resources. Of course, various measures need to be given attention for learning spaces to be conducive for teaching and learning. Importantly, the safety of both teachers and learners is also critical for the creation of learning spaces either during schooling hours or during out-of-school times. According to Maddox (2010), safety means uninjured or having good health. One possible solution among many that school leadership has, is the need for strategic involvement of parents and the community at large. Collaborative efforts of the parents and the community should be synergised in order to provide important services for the school (Owan, 2019). Of course, the needs of the school are for the school leadership to empower and support both teachers and learners to co-create formal learning spaces in schools. If this becomes successful, both learners and parents will be enabled to create informal learning spaces outside school premises and safety becoming a parent and community responsibility.

Safety is the condition of being protected from any form of harm or undesirable outcomes (Mubita, 2021). Overall, the discussion seems to give value to one of the most important partnerships that were previously not recognised. The value of parent-school-community partnership is perceived to be of paramount importance especially during COVID-19 pandemic that has ravaged education systems globally. The pandemic has shifted face-to-face interactions in schools to informal learning at homes. Similarly, public informal learning spaces such as libraries were closed in order to mitigate the spread of this deadly virus. In this regard, the efficacy of either formal or informal learning space is highly dependent on the safety measures that are put into place.

Parents have a significant impact in the affairs of the school for schools to prosper in creating learning spaces that best support the 21st learning. Therefore, it is crucial that they are involved in the initial design and the implementation processes throughout in order to account for perceptions and expectations (Bøjer, 2020). It should be acknowledged that parents are the determining factor in creating the best possible learning spaces that support 21st century learning beyond the classroom and the home. The ideal contributions to this endeavour include, but not limited to, providing learners with the necessary learning tools for either distance, mobile, group or collaborative learning. It is also vital that parents co-create with their children, the best possible environment that are conducive and safe for effective learner-centred and self-directed learning to take place beyond school hours. Despite the fact that most parents in rural areas do not take much interest in their children's schoolwork (Litheko, 2012), the school leadership must continue engaging with them; hence, they are an important element to achieve the desired end goals.

### 2.7.9 School leadership promoting contextually relevant learning modalities

In the preceding sections, I emphasised that the context in which learning spaces are created has an influence on the ways in which school leadership behaves. Twenty first century learning spaces are characterised by learning modalities that require the provision of the relevant educational resources and the reconfiguration of pedagogical practices, contexts for learning and infrastructure that continues to evolve (Kokko & Hirsto, 2020; Westera, 2011). The literature seems to bring to the fore the influence that the context has on the behaviours of people in the environment. School leadership has a variety of choices to make in relation to the learning modality of the 21st century they may pursue and promote. Learning modalities that underpin 21st century learning can either be mobile (m-learning) (Crompton, 2013), flexible (Neill & Etheridge, 2008) or blended learning (Albeanu & Popentiu-Vladicescu, 2019; He & Zhao, 2020; UNESCO, 2016). The understanding of different learning modalities enables school leadership to consider the type of learning that they prefer due to the perceived benefits and inhibitors. Some of the factors that negatively affect rural school leadership includes the availability and the use of relevant educational, human and physical resources (Surface & Theobald, 2014; Wu, Yang, Yang, Lu & Li, 2022). These factors are the determinants of the 21st century learning modalities.

Therefore, it is imperative to understand what each learning modality entails. For an example, the mobile learning mode on one hand, is purposefully designed to integrate classroom and outside classroom teaching and learning (Crompton, 2013; Eames & Aguayo, 2019; Sullivan, Slater, Phan, Tan, & Davis, 2019). As previously discussed, it is defined as learning across different contexts, through social and content interaction using personal electronic devices (Crompton, Muilenburg & Berge, 2013). Flexible learning, on other hand, better enables multiple innovative modes of learner-centred instructions and learning (Neill & Etheridge, 2008). With the knowledge and understanding of learning modes of the 21st century learning, school leadership will be enabled to make informed decision of the most appropriate learning mode considering their school contextual factors. Of course, school leadership gives their attention to pedagogical practices, physical design and information technological aspects that underpin flexible learning. At the end of the continuum is the focus on blended learning. Again, blended learning has been described as a practice of combining traditional face-to-face teaching approach of learning supported by technologies (Pete, 2010). What makes it important is its advantage in terms of complementing face-to-face learning with online digital learning (He & Zhao, 2020). Overall, evidence points to

a variety of learning modalities to which school leadership is exposed that gives that a platform to identify the what is best for their schools.

## 2.8 Conclusion

In this chapter, I have discussed important factors identified in the literature that I have reviewed. Before delving deeper into contributing factors to the creation of learning spaces, it was necessary to start by highlighting various understandings of different types of learning spaces at practical, theoretical, and philosophical levels. It emerged from literature that the understandings of learning spaces have an impact on how human resources interact with each other when they create learning spaces for the 21st century learning. While this issue is central to the creation of leaning spaces, there are myriad of challenges that emerge from literature that teachers, parents and learners encounter. The issue of technology-based resources and social ills became topical in understanding the creativity and innovations that school leadership at secondary schools in rural settings pursue in creating learning spaces for the 21st century learning for learners.

This chapter has also identified some gaps in the literature relating to research information and rurality. One gap that was identified is the dearth of research information from literature on crucial factors that may hinder a remarkable shift from traditional classrooms in rural areas into the 21st century learning spaces. It is critical to understand how some schools in a rural context are able to shift the learning discourse into spaces they had created prior to the break out of COVID-19 and the subsequent lockdown that ultimately mitigated the loss of teaching and learning time, when others did not in the same rural context. Furthermore, the literature has fallen short in terms of considering different contextual factors that must be catered for in the design principles, their implementation and the relevant mitigating strategies. The next chapter discusses in detail, the research design and methodology that was used in conducting this study.

# CHAPTER THREE

# THEORETICAL FRAMEWORK

## 3.1 Introduction

The preceding chapter has provided a review of international and continental literature that scholars have generated from their respective studies. This chapter aims at discussing a theoretical framework that underpinned this study. The purpose of this study was to explore school leadership activities in rural secondary schools when creating learning spaces for the 21st century learning for learners. The implications for creating learning spaces rest upon the school leadership to transform the current traditional classrooms into learning spaces that foreground learner-centric pedagogies. It is worth understanding that transformation in this study focuses mainly on the creation of learning spaces that best support 21st century learning and teaching. The main purpose is to provide learners with opportunities to develop relevant 21st century critical skills in the learning process (Campbell, 2019; Van Laar, Van Deursen, Van Dijk & De Haan, 2020; Yulianto, Pramudya & Slamet, 2019). Learners will then be empowered to participate meaningfully in the 21st century global economies. In this regard, transformational leadership theory is deemed appropriate to underpin this study.

A learning space that is created is not the final solution for the 21st century learning skills. The main purpose of learning spaces is to support the 21st century learner-centric pedagogical practices (Calhoun, 2007; Thomas, 2010). It is therefore, important for school leadership to ensure that instructional practices are attuned to provide learners with opportunities to develop the necessary skills in order for them to compete in the complex world that exist. It can be noted that a successful shift from traditional classroom into a learning space necessitates that teachers are able to adapt from traditional routines to pedagogical practices of the 21st century learning (Granito & Santana, 2016). Of course, it is the responsibilities of school leadership to ensure that curriculum implementation takes place as expected by educational authorities (Bush & Glover, 2009; Shava, Heystek & Chasara, 2021). As such, the behavioural change that is expected from teachers apparently, requires school leadership to embrace transformational leadership behavioural practices because the overall school environment will have to change.

There is a potential to reimagine pedagogies that will give effect to the efficacy of newly created learning spaces that can ultimately, impact on the efficacies of learning spaces on learning outcomes (Shava, Heystek & Chasara, 2021; Willis, Bland, Hughes & Elliot-Burns, 2013). It is on these bases that in my view, instructional leadership theory is another lens that forms part of a theoretical framework to underpin this study. Instructional leadership theory ensures that the 21st century teaching and learning predominates. Instructional leadership theory can be used to reflect on whether the affordances of learning spaces serve the same purpose for which they have been created.

The reflections are guided by the fact that pedagogical practices are performed through material objects such as technologies, architectures and material processes that include space (Mulcahy, Cleveland & Aberton, 2015). Indeed, the provision of material objects is a function of instructional leadership (Bush & Glover, 2009; Shava, Heystek & Chasara, 2021). On the same breadth, the necessity for teachers to adapt their current teaching and learning practices to that of the 21st century pedagogies is the responsibility of school leaders, especially those who adopt transformational leadership, through idealised influence (Bass & Riggio, 2006). The relationship that emerges between learning spaces and pedagogies shows that both learning spaces and pedagogies are reciprocally intertwined. The study is grounded in Transformational Leadership (Bass & Riggio, 2006) and Instructional Leadership (Hallinger & Murphy, 1985), and these theories are integrated to provide just one theoretical framework. The two theories complement each other in addressing emerging challenges from rurality and the teachers' conceptions of their professional responsibilities and identities (Mulcahy, Cleveland & Aberton, 2015). Moreover, given the fact that learning spaces are not absolute and fixed, but evolve and are always becoming (Massey, 2005). That in itself can cause uncertainty on teachers. In this regard, the aspect of complementary theories includes the provisions of school leadership with intellectual direction of empowering and supporting creativity and innovations of teachers when creating learning spaces (Leithwood, 1994). Meanwhile, school leadership must always be mindful of instructional activities of guiding teachers and learners, and ensuring the enhancement of teaching and learning in meeting curriculum standards.

On the same breadth, an integrated theoretical framework involves active collaboration between school leadership on curriculum related instructions (Glickman, 1989). The undertaking of the theoretical framework concurs with the views of Marks and Printy (2003) that transformational and instructional leadership complement each other. Therefore, this chapter discusses both

transformational and instructional leadership theories as a theoretical framework. I begin the discussion by presenting their inception, followed by the justifying for their relevance for this study, their dimensions, integrating transformational and instructional leadership theories and finally, I provide the conclusion of the chapter.

## 3.2 Transformational leadership

Transformational leadership is the centrepiece for transforming schools from an old order into contemporary organisations that promote a culture of accomplishment for all learners in the current era. The focus of transformational leadership is on the best methods of enhancing individuals' and group's performances when leaders motivate and inspire followers towards new prospects (Bass, 1985). Indeed, transformational leadership has a beneficial impact on creating learning spaces that best support 21st century learning for learners.

### 3.2.1 The inception of transformational leadership theory

It is imperative that I begin this presentation by discussing initial conceptions and the origin of transformational leadership. The concept of transformational leadership became an anchor for scholarly research, which has ultimately, developed into a fully-fledged theory that is relevant for this study. It started in the mid-1980s when the public increasingly demanded the school system to raise the standards of education and enhance learners' academic achievement (Stewart, 2006). It was at the time that instructional leadership model had emerged in the early 1980s in research for improving educational outcomes. In this regard, transformational leadership theory is premised on bringing about new leadership dimensions to that of instructional leadership models, which apparently, had its own shortcomings. According to Hallinger (2003), the shortcomings of instructional leadership models has been misunderstandings that emerged during its early development. Misunderstandings about instructional leadership led to a situation where many people believed that its primary focus was to put school leaders at the centre of authority, power and expertise. Clearly, there was, and still is, a need for people in educational leadership domain to develop a clearer understanding of what this theory is about and how it assists in improving learner outcomes.

Transformational leadership came into being because of instructional leadership that was perceived to be too prescriptive and a top-down linear conceptions of leadership and management

approach (Dimmock, 1995). Moreover, there was a general but broader dissatisfaction with instructional leadership model with a belief that it focuses too much on the school leader treated as having expertise, bestowed with more powers and authority (Hallinger, 2003).

The inception of transformational leadership theory began with Burns' (1978) understanding of this leadership theory. He defined transformational leadership as a creative approach to interaction that exist between leaders and followers, in which both parties play significant roles in influencing each other's' mindsets and activities that are geared towards shared organisational objectives. The inception of Bass's (1985) transformational leadership theory based on the influence from Burns' (1978) conceptualisation of transformational leadership describes the four 'I's of transformational leadership (Khanin, 2007, p.12). The four 'I's are idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. This has become a new paradigm for transformational leadership subsequent to that of Burns' (1978) conceptualisation. Burns argued that reliance on a faulty and overemphasised role of power makes many people to realise that the influence of most powerful emanates from deep human relationships where two or more people engage with one another. Burns' (1978) suggestion on transformational leadership is that it begins on people's terms based on their needs and wants that culminate in the expansion of opportunities for further developments.

Subsequent to Burns' (1978) conceptualisation of transformational leadership, in 2003, he acknowledged that transformational leadership is not only about raising followers' consciousness, but to be precise in the ways in which their lives are improved. In turn, Burns' (2003) studies came up with findings that can be viewed as the acknowledgement of the four 'I's from Bass (1985). For an example, Bass (1985) views the constructs of transformational leadership such as idealised influence and individualised consideration as the transformational leader's insights into the followers' motivations with regard to needs, values and wants. In this regard, transformational leadership has a profound influence on motivating followers in many ways with the main objective of enhancing their commitments and maximise their performances (Lowe, Kroeck & Sivasubramanian, 1996) towards bringing about effective change in the overall environment of schools.

Following Burns' (1978; 2003) and Bass' (1985) studies on transformational leadership, there are other scholars that subsequently expanded on the conceptualisation of transformational leadership (Avolio, 1999; Bass & Riggio, 2006; Leithwood & Jantzi, 2000) to mention but a few. Knowing

that there has not been any emerging consensus about the concept leadership, nevertheless, stakeholders exercise transformational leadership activities on the bases of culture and the context (Burns, 1978). A group of people that ultimately influence their behaviours and perceptions (Giorgi, Christi & Glynn, 2015), understands culture as beliefs and fundamental practices that are shared. Seemingly, the contexts in which transformational leadership activities are pursued may, to a large extent, differ. It is on these bases that transformational leadership theory continues to evolve and give insights into new dimensions that are attributed to cultural differences and contextual factors.

The evolving conceptualisation of transformational leadership has resulted in the provision of various dimensions. According to Leithwood and Jantzi (2000), seven dimensions describe transformational leadership. These are building school vision and establishing goals; providing intellectual stimulation; offering individualised support; modelling best practices and important organisational values; demonstrating high performance expectations; creating a productive school culture and developing structures to foster participation in school decision. Noticeably, some of the dimensions such as intellectual stimulation, individualised support and modelling best practices are also common in Bass's (1985) transformational leadership model.

### 3.2.2 Justifying transformational leadership theory

The centrality of transformation in an organisation is affirmed by transformational leadership activities. Despite transformational leadership lacking its focus on instructional practices and curriculum (Hallinger & Leithwood, 1998), the creativity and innovativeness are important factors that shape organisational culture (Leithwood, 1994). These two factors are crucial and core to the creation of learning spaces for the 21st century learning that school leaderships are expected to promote in schools. This implies that transformational leadership theory can serve as part of a theoretical framework for this study. Teachers possess vast amounts of knowledge that school leadership can tap on in order to create learning spaces for the 21st century learning for learners. The importance of school leadership in understanding that teachers possess critical knowledge of how learners learn is critical because teachers can be given discretionary authority to make their own instructional decisions (Hallinger, 1992). This implies that transformational leadership gives followers opportunities to take their active roles in ensuring that meaningful change in an organisation takes place. Similarly, school leadership that tap on the expertise of teachers and

enhance their ability to be creative and innovative in creating learning spaces that best support the 21st century learning for learners.

The commitment from all stakeholders is expected to be that which focuses broadly on restructuring schools by improving school conditions (Heck & Hallinger, 1999). Knowing that in most schools nowadays, especially in rural areas of South Africa, school leadership is too occupied with the responsibilities of ensuring that there is effective curriculum management (Abdullah, Ali, Mydin & Amin, 2019). Through the use of transformational leadership theory, we can understand how school leadership inspires followers to be creative and innovative in designing learning spaces that are better placed to support 21st century learning even in rural settings. Being creative and innovative enables teachers to re-imagine the classroom in ways that depart drastically from the traditional designs that focus on teachers rather than the learners (Beery, Shell, Gillespie & Werdman, 2013). The physical layout can support some teaching approaches better than others (Frelin & Grannäs, 2020). Capacities of the teachers to understand change and think creatively relies on personal inspiration as such values are located inside each person. That is why a change in behaviour occurs from within a person. Therefore, transformational leadership is crucial in this regard.

Organisational change such as that of the school is fundamental in ensuring that it remains relevant to the existing changes such as those demanded by the 21st century teaching and learning environment. For this to happen, school leadership capacity and commitments are critical (Burn, 1978; Bass, 1985). The creation of learning spaces becomes effective when there is concurrent teacher adaptation to learner-centric pedagogical practices of the 21st century learning. Indeed, the realisation of this kind of transformation is based on school leadership transcending to transformational leadership behavioural activities. Leithwood and Jantzi (2000) aver that influence and authority of transformational leaders are not necessary the exclusive domain of those occupying formal leadership positions. With this kind of knowledge, the influential capacity is attributed to the teachers who have the ability to inspire others to be creative and innovative in creating learning spaces and concurrently adapting to new pedagogical practices of the 21st century learning for learners.

Transformational leadership is renowned for emphasising transformational leaders' skills to encourage and support others in order to achieve more than they possibly could. In that process, transformational leaders, in turn, develop their own understanding of leadership capacity (Bass &

Riggio, 2006; Pieterse, Van Knippenberg, Schippers & Stam, 2010). In other words, there is reciprocal change and development whereby, both the leaders and the followers are transformed through their interactions. For this to happen, transformational leadership are continuously engaged in a process of inspiring others to commit themselves and be innovative in their practices. Inspired teachers will, to a great extent, be enabled to take initiatives and be innovative in creating learning spaces that best support 21st century learning for learners. The dimensions of transformational leadership have evolved as more research studies continue to be conducted.

According to Bass and Riggio (2006), there are currently four behavioural dimensions I have highlighted in the previous sections of this chapter, and these behaviours are; Idealised influence; Inspirational motivation; Intellectual stimulation and Individualised consideration. The understanding from literature is that transformation leadership theory gained prominence from Bass' (1985) conceptualisation of transformational leadership which relatively maintained their course even after several scholars had subsequently criticised both Burns' (1978; 2003) and Bass' (1985) conceptualisations. After a broad and in-depth interaction with literature, I then realised that there is confluence in the approaches to transformational leadership from both Burns' (1978; 2003) and that of Bass (1985) which are perceived to be contributing maximally in shaping transformational leaders' behavioural practices. I believe that such practices can contribute towards the creation of 21st century learning spaces for learners. That is why Bass and Riggio's (2006) transformational leadership model has been adopted as a theory to underpin this study.

### 3.2.3 Bass and Riggio transformational leadership theoretical model

Bass and Riggio' (2006) Transformational Leadership Model is located within a broader theory known as Transformational Leadership. This is the main theoretical model that underpin this study. It is imperative to understand its origin and development. Notably, transformational leadership that was initially postulated by Burns (1978) is a mother conceptual tool that can be used to understand the success of creativity and innovations by school leaderships and teachers. The existing four main components of transformational leadership model in literature as elaborated by Bass and Riggio (2006), have also been previously discussed by other theorists (Bass, 1985; Hallinger & Heck. 1996; Howell & Avolio, 1993; Leithwood, 1994; Leithwood & Jantzi, 1990; Leithwood, Leonard & Sharratt, 1998; Leithwood & Steinbach, 1993; Silins & Mulford, 2002). I therefore, recapitulate Bass and Riggio's (2006) transformational leadership components that I use as a framework to underpin this study. I used these dimensions or

components as reference point for the new knowledge of transformational leadership that is emerging from this study. This study is underpinned by Bass and Riggio's (2006) transformational leadership model. This model is comprehensive and embodies other transformational leadership theoretical constructs found in the literature. The four critical components of transformational leadership include, Idealised influence, Inspirational motivation, Intellectual stimulation and Individualised consideration have previously been mentioned in this chapter.

Before I delve on Bass and Riggio's (2006) transformational leadership model, I thought it necessary to highlight numerous standpoints from other scholars regarding what transformational leadership theory embodies. For example, Bass (1985) was first to conceptualise it and bring to the fore empirical development of transformational leadership theory that was developed by Burns (1978). Afterwards, other scholars followed in re-affirming the components of transformational leadership as identified above, but others discussed some diverging perspectives. The notion of diverging views and the evolving nature of transformational leadership is also indicated by Stewart (2006). This scholar further argues that this leadership has to adequately respond to the needs for transformation of schools and the impact of context. This study displays a divergent approach to the existing transformational leadership models. Generally, transformational leadership theories are premised on the leaders' abilities to motivate and inspire followers to do more than what these followers had planned to accomplish (Krishnan, 2005).

I noted that transformational leadership models typically focus on the leaders' behaviours in formal leadership positions and their impact on the followers (Bass, 1990; Avolio & Bass, 1995). In support of this view, the conceptualisation of leadership according to Burns (1978), includes the notion of leaders inducing followers to act in certain ways that represent the aspirations and expectations of both the leaders and the followers. Similarly, Bass and Avolio (1994) posit that transformational leaders do more in maximising the level of commitment of the followers. Moreover, they are perceived to be leaders in formal leadership positions that actively solicit new ideas and contemporary ways of doing things. In contrast to the above activities, this study argues that followers are now at the forefront of taking initiatives that ultimately, instigate leaders in formal positions to behave and do activities according to the followers' own terms and conditions.

However, Howell and Avolio (1993) indicate that the efficacies of transformational leadership practices have a causal relationship with transactional leadership. These scholars and others such as Burns (1978), are of the view that, by including contingent reward as a measure of enhancing

transformational leadership practices, the locus of control and the support for innovations by the followers, is diminished, and transactional leadership practices become key predictors that consolidate performances. On the basis of these revelations and others, they do not correlate with the findings of this thesis. This is because there are no rewards for the successful transformation of classrooms into learning spaces that best support the 21st century learning. Hence, this study argues that teachers not in formal leadership positions can take initiatives to bring about the much-needed changes. Behaving in that manner remains the domain of rural school leaders' responsibilities.

There are other descriptions of transformational leadership that have culminated in the development of other leadership models. In this case, Leithwood (1994) and Leithwood and Jantzi (2000) provide seven components of transformational leadership. I have listed them in the previous sections of this chapter, and I will not repeat them here. It is critical at this stage to present the transformational leadership model as advocated by Bass and Riggio (2006). In the transformational leadership model, Bass and Riggio (2006) conceptualise transformational leadership as featuring four dimensions that focus on giving attention on its process rather than the outcomes that are attributed to its practices. The dimensions are idealised influence, inspirational motivation, intellectual stimulation and individual consideration that I discuss in the next section.

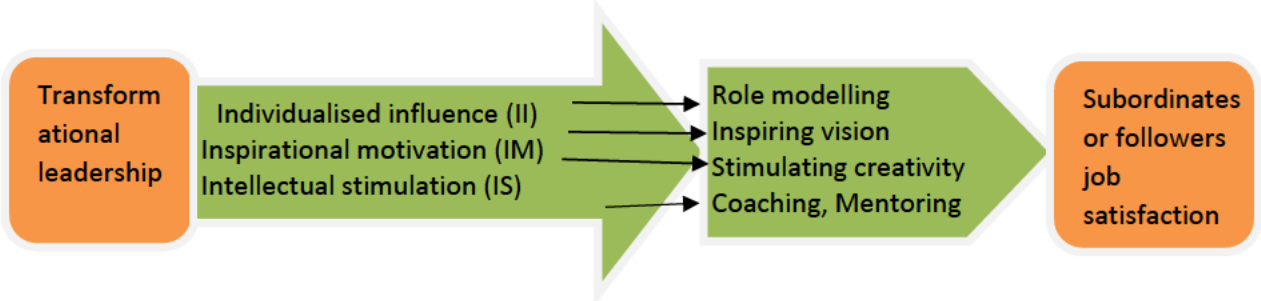


**Figure 1: Bass and Riggio's 2006 Transformational Leadership model adapted from Shibru and Darsham (2011)**

### 3.2.3.1 Idealised influence

Idealised influence has more to do with the followers identifying and trying to emulate their transformational leaders' behaviours. If this has to happen, school leaders have to demonstrate high moral standards, set achievable goals and specify the importance of having a strong sense of purpose (Bass & Riggio, 2006). Moreover, leaders must develop and show high moral ethics and trust among themselves and followers. In that light, transformational leaders are admired and

respected by their followers. In essence, the behavioural aspect of the school leader as the most senior person in the school leadership is critical to be a determinant for the degree of commitments by teachers. Sensibly, the behaviours of both the school leaders and the entire school leadership that encourages teachers to be willing to take risks. The risks that they will be taking consistently among others are to be innovative in creating learning spaces for the 21st century learning for learners.

The more teachers become aware that different settings of the learning space continue to evolve, the more they draw their inspiration from the behaviours of school leadership to continue thriving. Hence, the creation of learning spaces evolves due to various prompts such as evolving technologies that are infused into teaching and learning. According to Leithwood and Jantzi (2000), transformational leadership behaviours appear to be worthy at times of transformation. South Africa does not have statutory policy framework that guides the creation of learning spaces for the 21st century learning; perhaps, transformational leadership can make a difference. It then becomes necessary for teachers to move and go beyond their individual interests (Bass, 1985) for the good of innovations and the creation of learning spaces of the 21st century learning.

#### 3.2.3.2 Inspirational motivation

School leadership that displays transformational leadership behave in ways that motivate and inspire others to build a sense of efficacy in order to achieve broader educational objectives (Bass & Riggio, 2006; Leithwood & Steinbach, 1991). If this is the case, the spirit from teachers is aroused when school leadership creates clearly communicated expectations that teachers would want to meet. It is anticipated that school leadership should be proactive by taking initiatives to create learning spaces whilst transforming their traditional teaching practices to learner-centric pedagogies. In that light, a sense of inspiration will develop in teachers when they are convinced that the new approaches of teaching and learning have more advantages than the outdated traditional teacher-centric pedagogies.

The degree of inspiration to create learning spaces for the 21st century learning will be reached by teachers if school leadership is perceived by teachers to be visionary in their approaches to a change discourse. It is equally important that school leadership should be seen expressing an energising vision to the teachers (Berkovich & Eyal, 2021) as an influential strategy to teachers because they are key role players in creating learning spaces. Knowing that the creation of learning

spaces and transforming outdated traditional teaching practices to the demands of 21st century learning are activities that are done simultaneously (Granito & Santana, 2016). Teachers might be inspired to take risks and move to the unknown worlds through taking initiatives. The risks are associated with the complex amalgamation of creativity, technology integration into classroom and new approaches to teaching and learning in the 21st century (Reinius, Kohonen & Hakkarainen, 2021; Henriksen, Creely, Henderson & Mishra, 2021). The notion of inspirational motivation is critical if such complex confluence of expectations is at play in the process of creating learning spaces for the 21st century learning. Of course, one of the sources of their inspiration will be from what school leaders actually do when translating school vision into reality. The sense of inspiration that is felt by teachers enables them to interpret problems they encounter and by so doing, expanded array of solutions may come to the fore. Hence, envisioned changes are encompassed within a corpus sets of relations and various forms of practice (Reypens, Lievens & Blazevic, 2020). Therefore, inspirational motivation will somewhat assist the teachers to navigate their pathways of creating learning spaces that best support the 21st century learning for learners.

#### 3.2.3.3 Intellectual stimulation

Intellectual stimulation refers to transformational leaders stimulating and inspiring teachers to achieve more than they are normally imagined to be able to achieve (Bass, 2008). If this has to happen, transformational leaders have to ensure that they stimulate teachers' efforts to be creative and innovative by reframing the challenges, the known approaches and existing situations in new ways (Bass & Avolio, 1994). For this to be effective, the mistakes made by teachers in their endeavours to create learning spaces for the 21st century learning will have to be tolerated and should not face public criticism. This will provide passionate teachers with opportunities to be more creative and innovative in creating learning spaces and ultimately, influence others to follow suit. It is worth noting that school leadership generally, solicits new ideas and solutions to challenges from teachers they encounter, thereby addressing them as an all-encompassing collective effort (Bass & Avolio, 1994). On the same breadth, teachers are considered by their inclusion in the process of finding solutions for problems that school leadership encounters. This kind of practice seems to be one of the efforts that school leadership uses to stimulate teachers to be creative in addressing challenges they encounter when creating learning spaces for the 21st century learning.

#### 3.2.3.4 Individualised consideration

The behaviour of a transformational leader pays a special attention by proving support and guidance to each follower's unique needs (Bass & Riggio, 2006). The significance of individualised consideration encompasses individualised differentiated behavioural approach that demonstrate acceptance of individual differences. This behavioural approach of a transformational leader is informed by a realisation that creativity and innovativeness in the learning space is an individual effort and therefore, the necessary support must be in accordance with individual needs. Hence, other tasks are delegated to teachers by school leadership as means of developing them to be creative and innovative in creating learning spaces for the 21st century learning for learners.

## 3.3 Instructional leadership

The second theory adopted to complement transformational leadership is instructional leadership model as advanced by Hallinger and Murphy (1985). The main function of instructional leadership concept is that of prioritising and improving instructional environment of the school (Shava, Heystek & Chasara, 2021) in ensuring that effective schooling takes place (Shava & Heystek, 2018). With that kind of understanding, three dimensions of conceptualising instructional leadership include identifying the mission of the school; managing the instructional programmes and fostering a positive school environment (Hallinger & Murphy, 1985). The significance of instructional leadership theory or various models of the same leadership theory, is its focus on the dimension of fostering a positive school environment. This dimension includes several important functions such as supervising teaching, enhancing a conducive climate for successful learning, creating a positive work environment, coordinating the school's curriculum and fostering high performance standards to teachers and learners (Marks & Printy, 2003). As such, there is a connection between instructional leadership behavioural activities to the efficacies of creativity and innovations from teachers when creating learning spaces that best support the 21st century learning for learners.

### 3.3.1 The inception of instructional leadership theory

It is imperative that before dwelling on instructional leadership as a complementary leadership theoretical framework that underpins this study, the origin of this theory must be explained. Simply put, the reason is that there are earlier constructs of instructional leadership at the time of

its origin that have now evolved. Moreover, researchers have made different contributions that illustrate the understandings and the importance of instructional leadership in enhancing learner achievement in this era of the 21st century. Instructional leadership is known to have its origin in the USA during the 1960s (Hallinger, Cansoy & Bellibaş, 2021). It began with the conceptualisation of instructional leadership as the role of the school leader that helps teachers develop professionally (Gross & Herriott, 1966). For instance, Bridges (1967) defines instructional leadership as an individual that assists teachers by giving feedback after observing teaching practices, a designer applying techniques in order to enhance instruction, and also as an "experimenter" who develops innovative strategies for teaching and learning. This earlier conceptualisation of instructional leadership laid a foundation for further empirical research on practices and their effects (Bridges, 1982).

Empirical insights into the characteristics of school leaders as instructional leaders were offered in the 1970s and 1980s (Edmonds, 1979). Earlier on, literature displayed more contributions by placing school leaders at the top, and thus, being held accountable for learners' achievement outcomes, and also engaged in activities that were geared towards the enhancement of teaching and learning (Hallinger, Cansoy & Bellibaş, 2021). However, the increase in research has highlighted the impact of cultural and contexts of nations in determining instructional leadership practices of school leaders (Clarke & O'Donoghue, 2017; Hallinger, 2018). Evidence of the impact of cultural and contextual factors on varying dimensions that are peculiar to each country's educational environment is visible, and widely acknowledged in educational leadership and management scholarship.

### 3.3.2 Justifying the use of instructional leadership model

Instructional leadership theory has provided school leadership with diverse instructional strategies (Blasé & Blasé, 1999) that is consistent with the impact of cultural and contextual factors. It is through instructional behavioural activities of school leaderships that enable them to systemically improve teachers' effectiveness of their pedagogical practices that are consistent with learning spaces that they create to support them. Hence, the quality of education that provides learners with opportunities of developing the necessary 21st century skills is affected by leadership and pedagogical practices in the learning spaces, especially in the context of rurality. It is noteworthy to understand that the literature provides a more widely used instrument internationally as a rating scale and a benchmark of dimensions for measuring instructional leadership in different contexts

(Hallinger & Murphy, 1985). The instrument is referred to as the Principal Instructional Management Rating Scale (PIMRS). It defines the three dimensions for the role of instructional leadership as follows: defining the mission of the school, managing the instructional programme and promoting a positive learning climate (Hallinger, 1983; Hallinger & Murphy, 1985). Therefore, subsequent research studies of instructional leadership used this instrument to explore the understanding of instructional leadership in educational landscape globally.

The social and cultural context of China version makes a difference to the content domain and shape of instructional leadership. According to Li (2015), there are six dimensions of instructional leadership. The six dimensions are: defining purpose and direction; evaluating and monitoring instructions; nurturing a rich learning environment; aligning curriculum; fostering professional development and promoting external communication to support learning. Seemingly, the Chinese version of instructional leadership has more dimensions than that of the internationally recognised rating scale because of the country's social context. The functions of instructional leadership are characterised by the emphasis on national goals, maintaining the learning environment, motivating and enabling teachers, as well as monitoring programme alignment and test results (Gümüş, Hallinger, Cansoy & Bellibaş, 2021). With regards to the emphasis on national goals, an instructional leader always communicates national goals to all stakeholders because at times, the self-school developed, tend to lack clarity and measurability. The well- acquainted national goals underpin the development of vision and mission of the school so that teachers and learners have the same values as stated in the overall aims of the national education system.

In essence, when school leaders are maintaining the learning environments, it is then, perceived as a critical function of instructional leadership in the sense that effective teaching and learning activities are enhanced (Hallinger & Murphy, 1985; Gümüs, Hallinger, Cansory & Bellibaş, 2021). In the case of instructional leaders protecting instructional time, the emphasis is on monitoring the need for teachers to attend classes on time (Hallinger, 2018), limiting possible interruptions of learning (Kemethofer& Warwas, 2022) and then, cover for teachers should it happen that some are absent (Liu, Loeb & Shi, 2020). Furthermore, instructional leaders facilitate external support and attach the importance of enhancing parent-school-community partnerships (Elias, Patrikakou & Weissberg, 2007; Molise, 2021; Zuckerman, 2019). This partnership will largely assist the school in ameliorating some of the challenges that are contextually based. Therefore, school leaders pursue outsourcing various expertise from external services providers. It is with an understanding of the purpose of this study that learning spaces can also be created

anywhere when the affordances are available and accessible for ensuring that the 21st century learning takes place anywhere at any time.

In the case of maintaining the learning environment, various functions are critical for instructional leadership. The functions include providing resources, protecting instructional time and facilitating external support (Qian, Walker & Li, 2017). Meanwhile, the national context for Israel has influenced the defining roles of instructional leadership for school leaders. The approach of instructional leadership is that school leaders are deeply involved and focus on promoting best instructional and learning practices (Shaked, 2018). This domain of instructional leadership especially in Israel, assumes that qualification and socialisation are the two major functions of the schools (Biesta, 2009). Is the South African context, school managers are viewed as instructional leaders as they strongly focus on overseeing curriculum implementation across the school (Bush & Glover, 2009; Shava, Heystek & Chasara, 2021). In overseeing curriculum implementation, they must, primarily, ensure that all the appropriate learning and teaching support material (LTSM) are available. This task is crucial in ensuring that the culture of teaching and learning will thus be enabled. This obviously, could not be possible without principals promoting school-wide teacher professional development to maximise teacher competencies. Professional development will be collaboratively organised, planned and implemented by all teachers and school leadership. Collaborative activities of teacher professional development become successful on the bases of the principal's role of defining and communicating shared goals to both the teachers and the learners. A collaborative approach undertaken by teachers and school leadership, particularly, with the inclusion of the principal as an instructional leader, creates conditions that enable effective teaching and learning for all to take place (Hoy, 2012).

School managers remains the primary sources of instructional leadership powers in a South African school context. It is a common practice of principals to delegate duties to others members when the need to do so arises. This practice is somehow, viewed as a sharing of leadership roles that may ultimately influence learners' achievement (Shava et al., 2021). Since this is the case mostly in South Africa, subtle conditions emerge that enable teachers to share their experiences with their colleagues, thus, creating a collaborative working climate that gives effect to the successful creation of learning spaces. These developments can be highly impactful on the core business of the 21st century learner-centric teaching and learning activities. The enabling conditions for teachers to share their experiences are an illustration of moving away from the outdated traditional authoritarian approach of instructional leadership towards more democratic

and collaborative practices. This approach is perceived to be successful in emancipating teachers to be innovative in creating learning spaces that best support the 21st century learning. Indeed, the proponents of instructional leadership are primarily, the mission of effective teaching and learning for the 21st century. Therefore, school leadership should be keen to do the same (Firestone & Riehl, 2005). The current wave of creating learning spaces that best support the 21st century learning in South Africa is influencing the nature of leadership that must devise new and innovative practices of instructional leadership with traces of shared, collaborative and democratic leadership (Shava et al., 2021). In this case, principals as instructional leaders and accounting members at school levels, are the cornerstones of transforming and improving teaching and learning. It is understood that they cannot do all what is expected from them alone; they must therefore, create enabling environments for teachers to contribute meaningfully in creating learning spaces that best support for the 21st century learning.

Notwithstanding, the reality that there are as many dimensions and functions of instructional leadership as there are different cultures and contexts, there are presumably prevailing commonalities among them. For instance, according to Spillane, Hallett and Diamond (2003), instructional leadership relates to an influence towards motivating and supporting efforts by teachers to learn and change their instructional practices. The above scholars argue that any organisational change of routine practices is difficult. In the case of alleviating this difficulty, the approach of instructional leadership is to continue engaging and interacting with teachers in which they construct others as leaders. In this process of interactions, leaders are created among teachers. Since this is the case, instructional leadership is therefore, perceived, not to be an exclusive domain of the principal alone because teachers play important roles in improving teaching and learning (Smylie & Denny, 1990; Lambert, 2002; Mestry, 2017). In essence, school managers assuming instructional leadership activities in this instance, have the responsibility among others to identify a school vision, inspire and support teachers to be innovative in their pedagogical practices for the 21st century learning (Mestry, Koopasammy-Moonsammy & Schmidt, 2013). Nevertheless, in spite of diverging perceptions, dimensions and functions of instructional leadership, teachers are perceived to be empowered to be innovative in their teaching approaches to meet the demands of the 21st century teaching and learning (Spillane, Hallett & Diamond, 2003). Implicit to their innovativeness is the concurrent creation of learning spaces that best support the 21st century learning for learners that must be undertaken.

Fullan's (1991) perception of instructional leadership is that it is an active, collaborative form of leadership that involves principals and teachers. In this case, instructional leadership practice involves shared goals, teacher learning opportunities, teacher commitment, and learner learning. Apparently, this understanding implies that leadership activities is the responsibility of any teacher in a school setting. Since this is the case, the quality of teaching and learning is enhanced (Murphy, 1990). Indeed, in taking all these together from what Fullan (1991) has alluded to, they underscore the creation of learning spaces for the 21st century learning for learners. A divergent view of instructional leadership refers to all key responsibilities to be the purview of the school leader. According to Hallinger's (2011), in the construct of instructional leadership, the school leader is at the centre in identifying a school mission. Subsequently, the principal inspires and empowers teachers to take initiatives of innovations in enhancing teaching and learning. Furthermore, the principal as an instructional leader is expected to promote positive learning conditions, help teachers and learners to meet curriculum needs. Moreover, the responsibilities of the principal also include, among others, supporting teacher development while taking into cognisance the school context and the complexity of the school as an organisation (Hoy, 2012). Expectedly, the kind of development for this study includes, among others, empowering and supporting teachers to transform their outdated traditional teacher-centric to learner-centric pedagogical practices for the 21st century learning. In taking all together, Hallinger's (2011) standpoint on instructional leadership is that it is apparently, an exclusive purview of the principal.

There is another view where, the principal appears to be engaging teachers in instructional leadership practices. In this case, Hallinger (2011) avers that in order for the principal to increase the efficacy of instructional leadership practices, the quality of interacting and engaging teachers is critical. In essence, for the principal in taking this responsibility, such action is informed and concurs with an understanding that in turn, teachers create favourable environments for effective teaching and learning (Hoy, 2012). Indeed, favourable environments that are created by instructional leaders inspire teachers to take initiatives to be innovative in creating learning spaces that best support the 21st century learning. In the case of creating learning spaces that best support the 21st century learning, instructional leadership activities are informed by the necessity for teachers to transform classrooms into learning spaces. Since instructional leaders are perceived to be strong and directive, they have what it takes to successfully transform their schools in any given context (Bamburg & Andrews, 1990; Childress, Chimier, Jones, Page & Tournier, 2020; Hallinger & Murphy, 1985a). In this regard, one of the expected activities by instructional leadership among others, is that of redirecting their supervision towards re-engineered and shared vision that was set

collaboratively with the staff. In so doing, learning spaces will expectedly be created despite the constraints imposed by the multiple and multifaceted rural contextual factors.

The emphasis on instructional leaders' activities that include, among others, that of creating safe and orderly learning spaces for meaningful learner involvement, developing teacher collaboration, securing the necessary resources and forge home-school partnership (Weber, 1996). Notwithstanding the reality that the school and the community contexts can influence and define the school leadership practices (Clarke & Wildy, 2004; Diamond & Spillane, 2016; Wieczorek & Manard, 2018), their resilience enable them to successfully create learning spaces in rural settings despite strenuous rural contextual factors at play. Resilience in this case is conceptualised as a process that places emphasis on maintaining a positive adaptation in spite of experiencing constraints (Rak & Patterson, 1996). Instructional leadership model postulated by Hallinger and Murphy (1985) is deemed appropriate to underpin this study. I shall use this model in this study as a lens to elucidate how school leadership in secondary school create learning spaces for the 21st century learning for learners in the context of rural settings. Predominantly, this theory focuses on the role of the principal as the most senior person in the school leadership. Knowing that leadership in general is not an exclusive purview of the principal alone, other individuals not in formal leadership positions can assume leadership responsibilities either delegated by the school head or not. Collectively, they are referred to as instructional leadership or in some instances, as instructional leaders, the terms that I will be using interchangeably for the purpose of this study.

In this case, instructional leadership responsibilities include, among others, co-ordinating, controlling and supervising curriculum and instructions in the school (Hallinger & Murphy, 1985). This theory will therefore, assist in elucidating how rural school leaderships in secondary schools are enabled to create learning spaces for the 21st century learning for learners. Thus, ultimately, enhance learners' academic achievement (Leithwood, Jantzi & Steinbach, 2000) whilst learners implicitly, develop the necessary 21st century knowledge economy skills (Van Laar, Deursen, Van Dijk & De Haan, 2020; Latorre-Cosculluela, Quiroga, Sobradiel-Sierra, Lozano-Blasco & Rodríguez-Martinez, 2020). The significance of this instructional leadership theory by Hallinger and Murphy (1985) is that it encompasses and complements other models that are presented and discussed above. Hence, it encapsulates the dimensions and functions that are the benchmark of PIMRS. Unequivocally, it distinctively and clearly spells out the practices of an instructional leaders who may or may not have received a formal training as leaders. Knowing that in South Africa there is neither specific leadership qualification nor special training as a minimum pre-

requisite for teachers aspiring to be principals, this theoretical framework encompasses leadership activity from anyone in a school setting. Moreover, it is interesting to note that this theory advocates a hands-on instructional supervision in the formal learning space such as, for instance, the classroom (Hallinger & Heck, 1996a). It is therefore, critical that school leadership take their responsibilities collaboratively so that the benefits include among others the availability of educational resources that are to be utilised maximally and effectively to achieve the desired outcomes.

In view of what has been discussed in the paragraphs above, instructional leadership can therefore, be understood as any activity that is undertaken by school leadership to enhance the success of teaching and learning process, as well as school development (Hallinger & Murphy, 1985). Importantly, this instructional leadership model has three dimensions that define and elaborate its predominance to others, namely; defining the school mission, managing curriculum and promoting school learning climate. Each dimension has several specialised instructional leadership's behaviours and practices (Ismail, Don, Husin & Khalid, 2018) that will be discussed under each dimension hereunder.

#### 3.3.2.1 Defining the school mission

Defining the school mission is the first of three dimensions of instructional leadership. This dimension is about the role of the principal in determining the goals of the school collaboratively with the staff. According to Rodrigues and de Lima (2021), there are two functions of defining the school mission. Firstly, framing schools' goals is more about the role of the principals in ensuring that the schools have clear and measurable goals. Importantly, inclusive to the measurable goals is obviously the creation of learning spaces that best support the 21st century learning in regard of this study. Secondly, it is the function of school leadership to communicate school goals to the entire school community. According to Aliyyah, Rachmadtullah, Samsudin, Syaodih, Nurtanto and Tambunan (2020), the school community comprises parents, community members, learners and teachers. Hence, teachers are the crucial change agents for the new paradigm of learning spaces for the 21st century learning that must be created. Traditional leaders especially for this study are important school community members for their expected roles in the affairs of the local schools. The reason among others for school goals to be widely known to all stakeholders is that each sector has a critical role to play in ensuring the achievement of school goals.

#### 3.3.2.2 Managing curriculum and instructions

This dimension is mostly about supervising and evaluating classroom instructions. These practices are some of instructional leader's responsibilities that include monitoring and coordinating classroom practices relative to school goals stipulated in the first dimension. Notably, three functions that describe this dimension. These are supervising and evaluating instructions; coordinating the curriculum and monitoring learner progress.

##### 3.3.2.2.1 Supervising and evaluating instructions

The school leader (principal) as an instructional leader, exercises supervisory practice by taking the responsibility of providing teachers with information on contemporary techniques and tools for effective teaching (Iqbal, Rooh & Amin, 2021). The reason is that the school leader is an accounting person to the educational authorities and to parents. The responsibilities of a school leader are multi-pronged. Knowing that the school leader is in charge of all the activities, personnel and resources in his/her school, he/she is bestowed with an authority among others to supervise a plethora of relevant teaching and learning approaches. Subsequently, from supervising teachers on new approaches to teaching and learning for the 21st century, the responsibilities also includes monitoring how well teachers have received and thereafter, implemented the new ways of teaching and learning. For this to happen, an instructional leader monitors classroom activities through informal class visits. This behavioural practice of an instructional leader is critical in ensuring that each teacher receives the kind of support that is consummate to the needs.

Quite often than not, the evidence points to the new ways of teaching and learning for the 21st century but also that, they are in tandem with school goals (Thien, Lim & Adams, 2021). In taking all the above together, there seems to be an indication of the necessity of instructional leadership to be close to the teachers for immediate support to be timeously and successfully and effectively rendered. Hence, the creation of learning space for the 21st century is the new phenomenon to rural schools in the case of South Africa. This is informed by the reality of non-existence of neither policy guidelines nor training for both the teachers and the learners to adapt to the 21st century teaching and learning demands. Sensibly, there is closer proximity of an instructional leader to teachers providing him/her with an opportunity to develop good working relationships and at the same time evaluate instructions. This working relationship between teachers and instructional

leaders is of good practice that enables an earlier detection of challenges that may result in unintended consequences. Obviously, the ultimate goal of each school is the provision of quality teaching and learning, and that process rests on the principal's instructional leadership capabilities. It is therefore, imperative that the school leader as an instructional leader, is well vested and conversant with learning spaces that best support the 21st century teaching and learning approaches. With that acknowledgement, instructional leadership construct by Hallinger and Murphy (1985) is deemed relevant for this study.

#### 3.3.2.2.2 Coordinating the curriculum

It is common knowledge that for the education system to responds to the needs and present challenges of society, the implementation and coordination of the curriculum becomes significant. Curriculum as a word that is traced to Latin word "Currere" meaning to run a course, can be related to school curriculum with subjects to be learnt by learners. The curriculum can be perceived to be a blend of different subjects with different course contents, work programme, assessment strategies, learning outcomes and learning styles (Ofojebe, 2014). Although the word curriculum is defined in multiple ways, there are elements in defining it from a corpus of scholarly work. The elements are goals and objectives, subjects' content, learning experiences and evaluation (Ighamadu, 2006; Mulenga, 2019). One of the scholarly definitions refers to it as a sequence of professional experiences that is organised in school settings for the purpose of developing learners in multiple and multifaceted ways of thinking and behaviours (Mulenga, 2018). With this understanding of curriculum, instructional leadership have the responsibility to coordinate all the elements that define curriculum concurrently with the new approaches of the 21st century teaching and learning.

#### 3.3.2.2.3 Monitoring learner progress

Monitoring learner progress refers to an instructional leadership activity of using tests results as instruments of evaluating instructions, assessing the curriculum delivery. Working relationship of an instructional leader with the teachers enables a better understanding of the situation and better detection of challenges because the needs analysis will have been based on the various sources, thus, reflecting various perspectives. These sources include classroom visitations that are immediate and reliable rather than only external to the leaders such as the overall performance of the learners. For an instructional leader to rely only on test results will render his/her intervention

strategies to emerging challenges sometimes ineffective due to the delays involved. The avoidance of unnecessary delays for an instructional leader to render his/her support that seemed relevant to teachers in dire need will be of benefit to both teachers and learners. Hence, learning spaces that each teacher must create is a new phenomenon that comes with various challenges. However, with strengthened collective teacher efficacy that is informed by learners' progression analysis, teachers will be intrinsically motivated to effectively create learning spaces that best support the learner-centric learning for 21st century (Chung, 2019). In this regard, instructional leadership theory as enacted by Hallinger and Murphy (1985) underpin the school leadership activities and they place value to the new phenomenon of the learning space.

#### 3.3.2.3 Fostering a positive school environment

This is the third and last of the three dimensions. Like the second dimension, this one has five sub-themes that all speak to this notion of fostering a positive school environment. School learning climate in general and operationally, is regarded as the measure of teaching and learning environment that influences the behaviour of individuals based on their collective perceptions about the school (Taat, Talip & Mosin, 2021). With this understanding, instructional leadership will then promote a learning climate that enables teachers to create learning spaces for the 21st century learning. Notwithstanding that, the two other dimensions such as identifying the mission of the school and managing the instructional programmes are critically important. However, the notion of fostering school environment has a direct impact and is core to give effect to creativity and innovations of creating learning spaces that best support the 21st century learning for learners. This dimension of promoting school learning climate encompasses five functions. These functions are protecting instructional time; promoting professional development; maintain high visibility, providing incentives for teachers and proving incentive for learning. These functions are then discussed below in that order.

##### 3.3.2.3.1 Protecting instructional time

Instructional time refers to the amount of time for learners to be actively and successfully engage in teaching and learning (Gettinger, 1995; Marzano, Gaddy & Dean, 2000; Harn, Linan-Thompson & Roberts, 2008). Unfortunately, in most cases, instructional time is lost when teaching and learning is disrupted by a variety of factors. However, there are factors that an instructional leader can avoid that are internal to schools such as conducting staff developments, late coming

by teachers and holding meetings during contact time. Moreover, other factors include, but not limited, to teacher absenteeism and the ineffective use of available resources (Ismail, Awang, Ahbdullah & Othman, 2021). It is noteworthy to understand that other factors require extra-ordinary interventions in order to mitigate the negative effects of instructional time loss. They include the socio-economic conditions especially in communities with multiple deprivations that have become significant during COVID-19 pandemic in South Africa. According to Soudien, Reddy and Harvey (2021), many learners were unable to learn from home because they did not have access to the necessary infrastructure, finances and devices to participate in distance learning. In essence, instructional leadership is expected to make strides in protecting instructional time that may emanate even from external factors form the school.

#### 3.3.2.3.2 Promoting professional development

Professional development of teachers is an important aspect for any country especially in the current era of the 21st century learning. Notwithstanding this, the reality is that developed countries are well-advanced compared to the developing ones in terms of the 21st century pedagogical practices and learning spaces that are designed to support them. Since educational landscapes evolve as technologies also do, those pedagogical practices must also be integrated in the 21st century teaching and learning. If this is the case, no learner will be left behind from developing the much needed 21st century skills in order to participate fully in the highly skilled world economies.

It is on the basis of the background provided above that instructional leadership has the responsibility to organise and develop learning organisations at school levels. In this regard, instructional leaders have a responsibility, among others, to provide favourable conditions that enhance and sustain teacher learning (Admiraal, Schenke, De Jong, Emmelot & Sligte, 2021; Opfer & Padder, 2011). The actual practices by instructional leadership from different schools are not expected to merely, be the same because of the impact from different contexts such as rurality. Hence, pre-existing school conditions factor into ways in which teacher professional developments are planned, organised and implemented in each school. Of course, the ultimate goal is the realisation of teachers continuing to create the learning space that best support 21st century learning.

#### 3.3.2.3.3 Maintain high visibility

The visibility of instructional leadership including lesson observations, either formal or informal, is critical in order to appreciate the challenges teachers and learners encounter (Jenkins, 2009). With the understanding of what is going on in the classrooms and have dialogues with teachers, instructional leaders will be enabled to provide intervention measures for effective teaching and learning (Arrieta, 2021). Of course, teaching and learning will be learner-centric because the 21st century learning is the main target in the education landscape globally. Importantly, the high visibility of instructional leadership is more on developing teachers to be innovative in their pedagogies that are consummate to the 21st century, learner-centric learning.

#### 3.3.2.3.4 Provision of incentives for teachers

The provision of incentives to teachers is a purposeful practice to motivate them so that they are willing to accomplish teaching and learning goals. Currently, teachers for this modern society of the 21st century must be fully mastered in modern pedagogical and infuse advanced technologies in their profession (Abdurahmonovna, 2021). There is a growing need to teach in the form of distance learning, and, motivating teachers to create learning spaces for the 21st century learning is critical. Evidently, the impact of COVID-19 has made this need a priority that is not sparing any school or education systems that has not transformed teaching and learning to take place anywhere anytime. Incentives are provided in different ways at school levels such as instructional leadership giving financial incentives through travel allowance, claim for continuous professional development programmes taking place at the school level (Drukpa, 2021). Sometimes, the Ministry of Education enhances salary and allowances to those taking up additional responsibilities (Allen IV, Mahumane, Riddell IV, Rosenblat, Yang & Yu, 2021). There is an indication that the introduction of incentives for professional teacher development will make teachers to acquire more knowledge and expertise in creating learning spaces for the 21st century learning and other responsibilities.

Internationally, in most schools, the integration of information communication technology (ICT) is a prerequisite in the teaching process especially in secondary schools (Larijani & Abedi, 2021). This prerequisite for instance, in Romania, is subsequent to the curriculum training process including the 21st century pedagogical perspectives that is provided to all teachers. Nevertheless, training is being provided for teachers to integrate technology in teaching and learning but others

are found to be not using technology as expected. On the same breadth, most combine the use of technologies with traditional teacher-centric teaching approach (Vrasidas, 2015). The incentives in financial terms are provided to teachers who demonstrate the ability to integrate ICTs in teaching and learning displaying high levels of autonomy and creativity (Istrate & Găbureanu, 2015). There is an indication that incentives are provided mostly to teachers who embrace and are creative for the 21st century learning spaces and pedagogies with the integration of ICTs.

#### 3.3.2.3.5 Provision of incentive for learning

Learners can be enticed in different ways for them to appreciate participating and actively engaged in new approaches of self-centred teaching and learning in formal and informal learning spaces thus, created to support it. The incentives can include prizes and points as forms of rewards for different categorised best achievements (Nabor, 2021). Without learners' inspiration to embrace new approaches and given support to learning, the objectives of creating learning spaces may not be accomplished. Moreover, another approach that can be used to maximise learners acquiring more knowledge is to inform them about the rewards of education for their future endeavours. It also takes a form of incentives for excellent performances on assessments such scholarships or any form of rewards based on test scores (Allen IV, Mahumane, Riddell IV, Rosenblat, Yang & Yu, 2021; Conn, 2017; Glewwe, 2014; Le, 2015). This form of incentives will encourage learners to compete among themselves by working harder to improve their assessment scores. Implicit in this intrinsic motivation will be a realisation of the learner's self-initiated learning that is an epitome of the 21st century learning. Indeed, the learner's self in initiated learning takes place anywhere anytime which therefore, implies that learners are able to create learning spaces that best support their self-centred learning. With all that have emerged above, one can conclude that the incentive treatment has a motivational effect for self-initiated learning that is extended to take place beyond school contact time, anywhere anytime (Oblinger & Lippincolt, 2003).

All the factors that have been discussed suggest that Hallinger and Murphy's (1985) instructional leadership model is more relevant for the new approaches and the objectives of the 21st century teaching and learning. Yet, the existing two-tiered education system in South Africa continues to deprive learners from communities that face multiple deprivation such as the previously marginalised rural communities. To this effect, COVID-19 pandemic has undoubtedly revealed the depth of the loss of quality distance learning for learners from under-developed rural communities. Instructional leadership enacted by Hallinger and Murphy (1985) is more relevant

to underpin this study, operating in conjunction with transformational leadership according to Bass and Riggio (2006). It is noteworthy to acknowledge the complex situations that rural secondary schools in particular, are facing compared to their counterparts in urban settings. Therefore, one theoretical framework among many in their current forms cannot capture the multiplicity and multifaceted challenges that rural secondary school grapple with on daily bases.

### 3.4 Integrating transformational and instructional leadership theories for this study

The notion of transformational and instructional leadership theories complementing each other enables school leadership especially in rural secondary schools to respond in different ways to the challenges they encounter. According to Diamond and Spillane (2016), the school, the community and the organisational aspect are critical to understand in relation to school leadership practices; for example, behaving as either transformational or instructional leaders in rural settings. It is worthy to note that both transformational leadership and instructional leadership expect all school-level stakeholders to be involved in all key activities of the school in all school contexts. Most importantly, rural contexts cause school leadership sometimes to behave differently from the constructs of both transformational and instructional leadership in order to meet the educational needs of the 21st century learning (Hallinger, 2011). Therefore, the challenges in rural secondary schools may be similar, but the school leadership approach from each school in addressing them may at most differ drastically due to pre-existing conditions that are unique to that school. Since this is the case, so a cocktail of leadership approaches can be viewed as a panacea to addressing the challenges that are attributed to rural contexts. Thus, in this regard, transformational and instructional leadership theories may, to a larger extent, explain how the challenges emanating from rurality can be mitigated.

Transformational leadership on one side, builds school capacity as an organisation. Importantly, transformational leaders are mostly concerned about the individual and thereafter, collective understandings and commitments of teachers to their responsibilities (Hallinger, 1992). Quite significantly, their responsibilities include individuals taking initiatives and innovations in creating learning spaces that best support the 21st century learning. On the other hand, instructional leadership is more concerned with and focuses on leadership for instructions mainly for the contemporary teaching and learning approaches (Murphy, 1988). Concerning the focus of each theory, undoubtedly, there is an indication that both theories complement each other. The earlier conception of instructional leadership had the principal viewed as the sole agent of change in

managing instructional and supervision procedures (Marks & Printy, 2003). Understanding that teachers are in possession of critical information about how learners learn, it then becomes necessary that they make their own instructional decision (Hallinger, 1992; Sykes, 1990). This situation enables principals to share instructional leadership decisions with the teachers (Malen, Ogawa & Kranz, 1990). Moreover, school leadership practices have given effect to high probability for success in transforming schools from traditional teacher-centric to learner-centric pedagogical practices. Since this has become a reality, teachers therefore, have gained greater legitimacy to be instructional leaders (Little, 1988).

Meanwhile, it has been found that principal's leadership is second only to classroom teaching with regards to influencing the learning process (Leithwood, Day, Sammons, Harris & Hopkins, 2006). To this effect, instructional leadership becomes a shared responsibility through collaboration between teachers and the principal (Hallinger, 2011; Tuters, 2015). Since this is the case, instructional leadership is reconceptualised to be a shared instructional leadership model in replacement of the hierarchical notion of the principal as the sole instructional leader (Glickman, 1989). It emerged from the corpus of research that have highlighted the contextual forces that shape the expectations of school leadership with regards to instructional leadership responsibilities (Clarke & O'Donoghue, 2017; Hallinger, 2018a). These scholars argue that the influence of national contextual forces emanate from, but not exclusively to cultural, institutional and political contexts of different societies. Culturally, this becomes the lens that instructional leaders implicitly experience pressure to identify local values and norms of the society (Benoliel & Barth, 2017). In the case of institutional context, aspects such as policies, rules, standards, qualification requirements and the continuing changes in curricula all shape the scope of action, responsibilities and role definitions of instructional leadership (Armstrong, Armstrong & Barton, 2016; Grinshtain, 2018). Politically, the turn of the 21$^{st}$ century has reignited an increase in global interest of accountability; therefore, instructional leadership has occupied a central place for global education landscape (Shaked, Benoliel & Hallinger, 2020).

Despite the existence of highly complex, social complexities, instructional leadership must incorporate in their activities, the process of creating and sustaining an environment for effective 21$^{st}$ century learning (Shava & Heystek, 2018). In sustaining this environment, shared instructional leadership approach by school leaders have to provide many sources of influence by delegating certain activities to more experienced teachers with subject specialisations, including departmental heads. Knowing that secondary schools require teachers with subject specialisations,

there are instructional leadership practices that are relevant to others to exercise. That said, it is undoubtedly the reality that school leaders and any other teacher may not have specialisations in all subjects in a secondary school in particular (Gümüş, Hallinger, Cansoy & Bellibaş, 2021). The implications are that it is the responsibility of every one at secondary school levels to contribute meaningfully in the creation of sustainable teaching and learning environment for the 21st century learning.

The teaching and learning environment must enable teachers to familiarise themselves with the new crop of learners, evolving teaching and learning technologies, as well as the context in which learning is taking place. For this to happen, it is important that the instructional leadership gives teachers a certain degree of autonomy when engaging and interacting with the learners. Notwithstanding the responsibility of instructional leadership to monitor teaching and learning process that seems to be pervasive in the education system, the emphasis is also on the progress of transforming classrooms into learning spaces. Concurrently, instructional leadership will also be monitoring teachers' adapting their pedagogical practices for their relevance for the 21st century learning. The monitoring process will provide instructional leadership with information that will be useful for the creation of teacher professional growth in the 21st century education landscape (Shava & Tlou, 2018). Therefore, the kind of development that teachers are provided, culminate in intrinsic motivation of teachers to transform classrooms into learning spaces, as well as a shift from teacher-centric to learner-centric pedagogical practices.

Transformational leadership is particularly useful in explaining strategies of influencing team collaborations. The strategies include facilitating a climate of team interactions among the teachers (Morgeson & Hofmann, 1999). According to Cohen and Bailey (1997), a team is defined as a collection of individuals that are interdependent in their tasks, whilst sharing the responsibility of the outcomes, seeing themselves and by others as intact social entity, and as an integral part of larger social systems. It is noteworthy to acknowledge that transformational leaders are in unique positions to influence those team interactions relating to a shared vision of transformation. Thus, enhancing team leadership is perceived as a behavioural integration of all teachers in pursuit of innovations. The innovations are about creating learning spaces that best support the 21st century learning. Since this is the case, transformational leadership can also be conceptualised as influential by motivating teachers to rely on their social proximity to induce conformity to the rest of the teaching force.

Inductive reasoning from this transformational leadership behavioural practice as presented above, points to an emerging social bond among the teachers. This prompts individuals among the teachers to engage others and tune their attitudes to embrace new approaches of teaching and learning in the 21st century (Marsden & Friedkin, 1993; Hardin & Higgins, 1996). This concurrently creates conditions for learning spaces that best support the 21st century learning. This kind of behaviour is perceived as an intellectual stimulation (Bass, 1995) and it is one of the dimensions of transformational leadership model.

Emerging from the displayed behaviours by teachers are the indications of individuals within the school setting who can exercise and has an influential capacity towards others. Therefore, leadership is generally understood as a process of influencing others to understand and agree on what is to be done and how it can be done (Yukl, 2010). Since this is the case, teachers who display such behaviours of sharing leadership functions can also be transformational leaders even though they do not occupy any formal leadership position in the school. In taking all the above discussion together, one can conclude that transformational leadership is not the sole domain of principals or anyone in formal leadership position. Therefore, multiple sources of continuous support, motivation and empowerment are envisaged from the kind of working environment that is created.

Drawing from the above behavioural practices among staff members, transformational leadership practices are shared among teachers; hence, a shared transformational leadership becomes an emerging concept. Meanwhile, a shared transformational leadership involves the displayed behaviours from multiple team members influencing each other regardless of their formal responsibilities (Koeslag-Kreunen, Bossche, Van der Klink & Gijslaers, 2021). In essence, the emphasis is on the practices of transformational leadership that includes among others, the ingredients of change such as influence, new ideas, innovations and individuals being considered in the process (Marks & Printy, 2003). In this instance, the principal as the most senior member of the school leadership, recognises teachers as equal partners in terms of their professionalism and then, capitalise on their knowledge and skills (Darling-Hammond, 1988). Sensibly, the capitalisation on teachers' knowledge and skills among others, is to objectively influence and empower them into organisational leaders (A-Hong, Rodprasert & Chullasap, 2021) inspired to have positive attitude towards creating learning spaces for the 21st century learning.

### 3.5 Conclusion

This chapter discussed the theoretical framework that underpins this study. The nature of this inquiry evokes the need for the theoretical framework that spans across both transformational and instructional leadership constructs. Evidently, the efficacy of transforming schools into learning spaces is highly reliant on instructional practices. In this regard, I began by presenting and discussing transformational leadership according to Bass and Roggio (2006). Later on, I discussed the instructional leadership model according to Hallinger and Murphy (1985). Transformational leadership model is made up of four dimensions - idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. This discussion was followed by the presentation of instructional leadership model. Regarding instructional leadership theory, the presentation focused primarily on promoting school learning climate as one of the three dimensions that feature prominently in this study. This model is about protecting instructional time, promoting professional development, maintain high visibility, as well as providing incentives for teachers and learners. The following chapter presents a discussion of the research design and methodology that was followed in this study.

# CHAPTER FOUR

# RESEARCH DESIGN AND METHODOLOGY

## 4.1 Introduction

The previous chapter presented a detailed discussion about a theoretical framework that underpin this study. It presented both the Transformational Leadership Theory (Bass & Riggio, 2006) and Instructional Leadership Theory (Hallinger & Murphy, 1985) as theories that constitute a theoretical framework that is relevant for this study. This chapter presents a description of the research process including a research design and the methodology that was used in undertaking this research, as well as the justification thereof. Thus, this section discusses and presents the blueprint of the research paradigm underpinning the whole study, including the choice of the design and the methodology, the sampling and data generation methods, as well as the analysis. The issues of trustworthiness, ethical consideration and the limitations of this study are presented, and the conclusion of this chapter ends this chapter.

## 4.2 Research paradigm

I adopted interpretivist research paradigm for the study because it provided me with a deeper understanding of creative and innovative ways that teachers used to create learning spaces of the 21st century learning. I took a decision to premise this study within interpretivist research paradigm because of the general assumption that people make meaning of the social world from their understandings and beliefs about it (Mertens, 2005). Interpretivist paradigm framework enabled me to understand the participants' innovative strategies that they used in pursuit of creating learning spaces in their natural settings. In this regard, Prasad (2005) highlights that interpretivist paradigm provides an opportunity to interpret the constructions of meanings and the ways people understand the subjective nature of reality.

Furthermore, I made use of interpretivist paradigm to underscore this study based on my understanding that there are sources of influence leading to divergent ways that people behave. The sources of influence may include the context within which people interact with each other and their environments, as well as their background experiences that determine how they behave. Similarly, Creswell (2003) emphasises the importance of recognising the impact of people' own

background and experiences on the research. Since this is the case, I then considered that, as individuals are unique, therefore, there are multiple socially constructed realities that are attributed to learning spaces that emerged from generated data.

I anticipated that the participants would have different understandings of what a learning space entails and what it meant to each individual (ontology), which, to a great extent, are divergent in nature. Indeed, I can relate to Goertz and Mahoney's (2012) view that there are multiple realities that exist which they call ontological assumption. This aspect of ontological assumption assisted me in discovering how the participants make sense of their socially constructed realities that constitute learning spaces of the 21st century learning for learners. Knowing that there are different participants who consented to participate in this study, that assured me of the importance of a paradigm that would enable me to interpret multiple and divergent mental constructions of learning spaces by teachers within a context of various circumstances posed by rurality.

I came to know and understand about how learning spaces that best support the 21st century learning can be conceptually and practically socially constructed, by analysing and interpreting the participants' voices and reviewing documents from both schools. When I was interacting with the participants from both rural secondary schools and the review of documents kept in these schools (Hjørland & Hartel, 2003; Krauss, 2005), I was able to identify the dominant issues that underscore this study. Of course, I came to learn about the reality through the participants' voices that were informed by their own background and experiences (Creswell, 2003; Yanow & Schwartz-Shea, 2011). I sought to understand creative and innovative ways that teachers in both rural secondary schools employed in their endeavours to create learning spaces that best support the 21st century learning for learners.

In view of methodological assumptions, I employed a case study tradition where I used semi-structured interviews and review of documents in attaining in-depth understanding of teachers creating the learning space that best support the 21st century learning. Interpretivist paradigm allowed me to obtain in-depth understanding and description of complex issues of the case drawn from such a small informative sample. Overall, with all the background knowledge that I gathered about interpretivist worldview; I was empowered to get in-depth understanding of the ways in which the participants conceptualised learning spaces in the first place. I went on to the extent of understanding the relationship between innovative ways of creating learning spaces attributed to the participants' background experiences and the impact of rurality. Nevertheless, the rich data

that I generated was underscored by the central endeavour of interpretivist paradigm within the subjective world of the individuals' experiences (Cohen, Manion & Morison, 2011). This paradigm reinforced my understanding that knowledge is socially constructed with the context playing a significant influence in that regard.

### 4.3 Research design

I chose a qualitative rather that a quantitative research design to underpin this study because of the nature of this inquiry. This inquiry focused on understanding creativity, innovations and experiences of school leaderships when they create learning spaces that best support the 21st century learning for learners. Qualitative inquiry is a design that is different from quantitative (Creswell, 2009) and mixed (Creswell & Creswell, 2018) method designs. Also, within this big family of qualitative design are many different paradigms such as critical (Morison, Gibson, Wigginton & Crabb, 2015), pragmatic (Smith, Bekker & Cheater, 2011) and constructivism (Sudarsan, Hoare, Sheridan & Roberts, 2021).

My choice of qualitative research design as a suitable approach for this research project was based on the aims of the study as it sought to establish the meanings that the participants attached to learning spaces from their perspectives and experiences. Similarly, Creswell (2009) alludes to this notion of the researcher seeking to establish the meaning of the phenomenon from the perspectives of the participants. This qualitative research approach specifically provided me with an opportunity to learn about school leadership's understandings of and the ways in which they adopted strategies to create the 21st century learning spaces in rural settings. Moreover, the approach to empirical inquiry is premised on understanding contemporary phenomena within the participants' real-life context (Yin, 2003).

Furthermore, the rationale for adopting a qualitative approach is also informed by the type of research questions that sought to elicit understandings of the phenomenon under study and meanings of activities from the participants' perspectives as they are express within specific social contexts (Denzin & Lincoln, 2005). According to Creswell (2014), a qualitative research tradition involves exploring and understanding the meanings that groups or individuals attribute to their social challenges. Therefore, this inquiry that I am presenting, fosters a belief of the cohesion of interpretivist paradigm and qualitative approach (Nind & Todd, 2011; Thanh & Thanh, 2015;

Thomas, 2003; Willis, 2007). This empirical inquiry is therefore, underpinned by a qualitative case study research tradition.

The emphasis on epistemological stance regarding qualitative research is the use of different data generation methods that result in descriptive account of practices or settings among others. To this end, I used semi-structured interviews and documents review to generated quality and rich data in order to understand the activities by leadership and teachers when creating learning spaces that best support the 21st century learning for the learners. My standpoint regarding adopting qualitative research approach is underscored by Kothari (2004) who refers to research methodology as a systematic way in solving the research problem that requires knowledge and identifying a research method to be used with the reason(s) behind why it is chosen among others. According to Denzin and Lincoln (2005), a research methodology is determined by the nature of research and the subject being explored. The main aim of this qualitative case study approach was for me to explore and understand how school leadership can create learning spaces that best support the 21st century learning for learners in rural secondary schools.

I also made the choice of qualitative research approach because this approach involves naturalistic and interpretive nature of inquiry (Denzin & Lincoln, 2000). This includes its embedded provision of exploring a variety of data sources (Baxter & Jack, 2008; Yin, 2003). It is in this regard that I considered generating empirical evidence and explored the interrelationship between the phenomenon and its context (Stake, 1995) that are unique to this study. On the grounds of understanding the values of qualitative research approach, I then sought to explore creativity and innovations that school leadership pursued in creating learning spaces for the 21st century learning for learners. Of course, these initiatives become effective by indications of concurrently transforming traditional teacher-centric approaches to learner-centric pedagogies of the 21st century learning whilst taking into cognisance the impact of rural contextual factors.

Overall, the qualitative multiple-sites case study approach was deemed appropriate to provide rich and in-depth understanding of school leadership activities in their endeavours. The endeavours are precisely to use creative and innovative ways of ensuring that classrooms are primarily transformed into learning spaces that best support the 21st century learning for learners. Notwithstanding the reality that meanwhile as the learning space is being created, there is a process of teachers having to adapt their professional practices to pedagogies attuned in enhancing the efficacies of the learning space. That said, the qualitative research methodological framework in

pursuit in this inquiry is underpinned by interpretivist paradigm from which the grounded theoretical framework can be developed (Walter, 2006).

### 4.4 Research methodology

I adopted a multiple-site exploratory case study methodology. This is a single case observed in unison from two different sites in order to advance understanding of the object of interest. I adopted this case study to guide this inquiry because of ontological and epistemological assumptions of interpretivist paradigm that I have discussed above. I believe that multiple social realities (ontology) exist because of diverging human experience. The realities include interpretations, experiences, opinions and general knowledge (Cantrell, 2001; Merriam, 1998). With this belief system in mind, it became my source of inspiration to delve deeper into subjective individual creation of the learning space that best support the 21st century learning for learners.

I considered a case study to be suitable as it provided me the opportunity to describe the phenomenon under study in real-life context in which it occurred. A case study methodology enabled me to explore and better understand the kind of activities that school leadership had decided to take in creating learning spaces for the 21st century in spite of myriad rural complexities at play. On the same breadth, Stake (1995) indicates that a case study explores real-life situations over time through in-depth detailed generation of data from multiple sources of information. Indeed, the data was generated within the situation in which the activities take place (Stutchbury, 2022) from different participants and document analysis as sources of information. Therefore, ultimately, the data has provided insights into the subjective interests of different participants. After I had taken a decision to employ a case study methodology, I also decided on adopting an exploratory case study with the belief that it would best answer the research question. An exploratory case study is among other types of case studies such explanatory, descriptive and multiple-case studies as presented by Yin (2003).

The focus of the case was on data that I generated from thirteen participants from two secondary schools in a rural setting in 2021. Having two separated research sites, this exploratory case study is categorised as a holistic instead of being a single or a multiple-case study. It is a holistic case study in the sense that only one critical case in multiple sites in a rural context instead of examining different cases that are meant to understand similarities and differences between multiple case studies. It is also worthy to understand that the boundaries of this holistic case study are

determined by the initial propositions that emanated from my professional and personal experiences (Miles & Huberman, 1994; Yin, 2003). As indicated by Yin (2003), holistic case studies are concerned with the interest of looking at the same issue, intrigued by a plethora of experiences from individuals or group of people while considering the influence attributed on the context. Indeed, this study is associated with the attributes on complexities emanating from rural setting because I considered the contextual conditions to be relevant (Yin, 2003). Moreover, boundaries are not between the context and the phenomenon under study.

I took a standpoint of adopting a case study in spite of divergent definitions from myriad of scholars in the literature. Meanwhile, Mouton (1996) posits that case studies serve to maximise the validity of the findings. My standpoint is also embedded in the understanding of a case study as an in-depth study of the phenomenon in its natural setting using the participants' understandings and experiences, as well as various data generation procedures over a sustained period of time (Stake, 1995; Yin, 2012). This definition is commensurate with data that I generated from the participants' understandings and experiences regarding learning spaces in rural settings and also from the documents' reviews. It took me a maximum of six weeks in 2021 to conduct semi-structured interviews with thirteen participants from two rural secondary schools and four weeks reviewing copies of documents that I received from school leaders. Indeed, the case study methodology allows empirical inquiry into the phenomenon in its real-time context, using diverse sources of data for better crystallisation (Nieuwenshuis, 2007). Similarly, Stake (1995) and Yin (2012) emphasise the importance of enhancing trustworthiness of an in-depth case study of the phenomenon in its natural setting by using participants' understandings and experiences obtained over a sustained period. This issue is discussed in detail in the trustworthiness section later on in the chapter.

With this holistic case study, I was able to understand creative and innovative ways of school leadership crating learning spaces of the 21st century learning. Of course, I took a note of complex issues emanating from rurality that influence the activities of school leaderships and teachers. Hence, I conducted this study within participants' real-life rural context (Kataja, Lantela & Romakkaniemi, 2022). In essence, it was made possible by using the guiding principles of the case study methods that included among others the selection of a small geographical area with limited number of participants as sources for this inquiry (Zainal, 2007).

### 4.4.1 Sampling research sites

Before I decided on selecting a sample strategy, I delineated the study population of school leadership based on *a-priori* theoretical understanding of the initial stages of developing the topic being studied. Initially, two secondary schools that are located at Ndwedwe rural area, North of Durban in the province of KwaZulu-Natal, South Africa, were broadly spoken about mostly during the 'teacher-talk', and also during teacher professional developmental workshop that were conducted by the officials from the Department of Education in the province. In those workshops that I attended, teachers from other secondary schools were encouraged to 'twin' with these two well-resourced schools with regard to technology resources. Twin is a process that involves sharing equal resources among schools, fostering teacher development and capacity building and has benefits in terms of best school leadership best practices in improving learner achievement (Chilunjika & Chilunjika, 2021; Mbokazi & Mkhasibe, 2021).

The sources of my inspiration to use these schools as my research sites included the fact that the two schools in question were thought to be advanced in terms of infusing technology in teaching and learning. My assumption was that the infusion of technology in teaching and learning on one hand, changes the role of the teachers to be the facilitators of learning. On the other hand, the learning processes are becoming learner self-centred. Fischer, Axley and Ciobanu (2014) aver that classrooms that are turning to technology for teaching and learning, prompted teachers to charge their roles and ultimately move learners away from being consumers of information to become produces (p.11). On the bases of *a-priori* theoretical understanding is that schools that imposed digital technologies in unaltered traditional classroom may reinforce teacher-centric pedagogies and existing learner behaviours. The gap exists for the need to understand innovation and creativity for creating learning spaces that best support the 21$^{st}$ century myriad of learning modalities. As indicated by scholars, for example (Byers, Hartnell-Young & Imms, 2016; Selwyn, 2010; Tyack & Tobin, 1994) when they argue that by imposing digital technologies on unchanged classrooms result into superficial transformation of pedagogical practices and learning experiences by learners.

Given the background of the initial developments, non-random purposive sampling is an appropriate strategy to use from the target population of school managers and teachers in rural secondary school to locate an information-rich case study. Purposive sampling is described by scholars as a strategic and carefully selected items (Patton, 2014), that are often provided in the

context of sources of data that is predominantly interpretivist and qualitative (Baltes & Ralph, 2021). According to Etikan, Musa and Alkassim, (2016), purposive sampling is a deliberate choice of selecting participants due to their qualities in terms knowledge and information the participants possess. I used this background knowledge of non-random purposive sampling to decide what need to be new knowledge that this study can contribute. This background knowledge assisted me to select individuals that are apparently proficient and well-informed with a phenomenon under study.

The study population are the secondary schools located in rural communities with multiple deprivations (Maringe, Masirine & Nkambule, 2015). The two secondary schools qualified to be research sites for this study because they bear typical characteristics of interest for this study. The two out of nine secondary schools in the sample represented range on characteristics of interest under the jurisdiction of Ndwedwe Circuit of the KwaZulu-Natal Department of Education located in the rural area of Ndwedwe, North of Durban.

### 4.4.2 Recruitment of the participants

Initially, I had decided to have a provisional sample size that should not be less than five and more than ten participants per site. Each of the two sites should preferably be comprising at least, the school principal, the deputy principal, the departmental head and not less than two Post-level One educators. The reason for these categories of participants is from *a-priory* theoretical understanding of the topic under study, that their presence may have unique, different and vitally important contribution to make on the phenomenon under study. Hence, the creation of learning spaces requires the involvement of all stakeholders for their efficacies.

After having a provisional sample size and gatekeepers had granted me permission to use their schools as research sites, I then set up appointment to visit each of the two schools on separate occasions to meet with staff. I looked at the school principals' weekly scheduled staff briefings in order to introduce the study and the main aim of conducting it. The presentation of my study project actually served as a recruitment exercise and encouraging school managers and teachers to participate in this study. I gave the participants all the necessary information about the study, including their rights as participants. I explained to the attendees that there were no financial benefits and that their names and that of the school would be protected.

The sample size comprised fourteen participants from a response rate of 41,9 percent, six from Themba Secondary School but one withdrew and eight from Sizwe Secondary School that responded with their consent to participate in this study. Therefore, the sample size of thirteen participants comprises two principals, one deputy-principal, two departmental heads and eight Post-level One educators or teachers as they are also called in South Africa. They indicated interest and the ability to provide information required for a comprehensive analysis during the first time when I presented my topic in order to motivate teachers to participate in the study. According to Yardley (2000), the adequacy of the sample in terms of the ability to give rich information is integral to enhancing rigour of the inquiry. The information will be rich in a sense that the school managers and teachers worked as a collective for them to thrive and gain prominence in making a profound shift to the 21st century learning. Any individual in these particular schools would share valuable information for this study.

### 4.5 Data generation methods

After the thirteen participants had consented to participating in this study, I had to apply particular methods among many to generate data for this qualitative case study. According to various scholars (Bryman, 2016; Myers, 1997; Patton, 1990; Ross & Amir, 2021), other data generation methods include focus group, practice-based design and artefacts. However, Goldkuhl (2019) posits that qualitative data generation include interviewing people, observing participants and selecting documents for review. Indeed, data generation is a systematic generation of data for a particular purpose from a variety of sources, usually taking place simultaneously with data analysis in qualitative inquiry (Kombo & Tromp, 2006).

I employed semi-structured interviews and the review of selected documents on request as my primary sources of qualitative data generation. The decision to use these two data generation instruments is that the nature of this inquiry is that I wanted to understand the meanings that individuals attached to the phenomenon under study and the impact of individuals or group activities with demonstrable organisational effectiveness (Lincoln, 2005). I did not observe the participants in practice, fieldwork and other methods because of the two main reasons. Firstly, I generated data from May to June in 2021, the year where all people worldwide were to observe COVID-19 protocols, which included limiting physical contacts among people in order to reduce the surge in coronavirus infections. The second reason is insufficient funding for travelling costs

as I would travelled too frequently. I believed that the two data generation methods provided me with rich and meaningful data for the quality of this qualitative study.

### 4.5.1 Semi-structured interviews

Before I began with eliciting data from participants, I contacted each participant to make an appointment for conducting interviews and also asked for permission to audio-record our interview sessions. In each potential interviewee, I suggested a variety of means of communications rather than the normal face-to-face interviews that we could use for our one-on-one interview sessions. I mentioned social media platforms to agree on which one we can use such as WhatsApp video or zoom and telephone conversation in order to avoid physical contact as one of the COVID-19 protocols of reducing the transmission of coronavirus. From all of my participants, face-to-face interview sessions were the only method they were comfortable with. I then decided to lead the discussions and agreed on safety measures that each participant and me were going to observe such as wearing the protective equipment and observe social distancing. I also discussed with each participant the convenient venues and times to them for our face-to-face interviews. Twelve suggested their schools to be the venues for our interviews with the exception of one who decided that we meet in a neutral venue that she identified because she was on sick leave at that time of conducting interviews.

I chose semi-structured interviews as my primary data generation method because of my understanding that questions I asked the participants would elicit rich descriptive data from them, and these took the form of an interview guide. The interview guide assisted me to ask the participants probing questions that prompted them to provide me with rich and in-depth information they had at their disposals. This style of questioning participants prompted them to elucidate further (Corbetta, 2003). Moreover, Gary (2004) posits that semi-structured interviews are a good technique of getting in-depth understanding of the participants on the phenomenon under study. The questioning technique of probing for more information from participants enabled me to understand the meanings and experiences that the participants provided (Rubin & Rubin, 2012). In support of this line of questioning technique, scholars (Kajornboon, 2005; Kvale, 1996) aver that primarily, interviews are systematic practices of gaining knowledge by way of questioning and listening to views of participants as one-to-many methods of qualitative data generating techniques on issues of mutual interest. Since this was the case when I conducted semi-structured interview sessions with thirteen participants for this study, I was able to get rich and in-

depth understandings of the initiatives that school leadership undertook to create learning spaces the way they did. This technique that I pursued allowed me to probe further from the participants in order for them to elucidate more rich information (Merriam, 1998).

All thirteen participants suggested that the only method for uninterrupted audio-recorded interviews, which I had sought from them, was through face-to-face engagements because of network challenges they were experiencing in their rural areas. This challenge concurs with the findings from a study that was conducted by Chisango, Marongwe, Mtsi and Matyedi (2020) in the rural areas of the Eastern Cape province of South Africa. These scholars aver that there is poor internet connectivity in rural areas. Furthermore, I found that there is a lack of digitally competent teachers which is similar to what I notice to some of my participants who preferred face-to face interviews. However, we agreed on observing all COVID-19 safety protocols.

The venues for semi-structured interviews were suggested and chosen by the participants that happened to be their schools. Semi-structured interviews took place during break times with five participants from Themba Secondary School and with six from Sizwe Secondary School. Through WhatsApp media platform, I reminded each participant a day before regarding the interview session for the following day. The interviews with the last two participants from Sizwe Secondary School were during the times when they were not in classrooms for teaching. The duration of each interview lasted for about 30-45 minutes. To this end, all the interview sessions were audio-recorded and each was subsequently, transcribed *verbatim* whilst also taking notes of non-verbal expressions of each participant.

### 4.5.2 Documents review

I also used documents review as the second primary source of generating qualitative data. This decision is reliant on my assumption that firstly, the information presented by the participants ought to be crystallised in order to add rigour to a study. Cardno (2018) affirms by stating that documents review is an appropriate second research technique (p. 626). Secondly, I assumed that sometimes, the research questions and probing questions may not cover length and breadth of the information that would have assisted in achieving the objectives of this study. Furthermore, my assumption about documents is that there is a lot of rich and valuable information that may assist in the in-depth understanding of the activities of school leadership and teachers in creating learning spaces for the 21$^{st}$ century learning. The information from the documents review may

assist in crystallising the information that I generated from face-to-face semi-structured interviews.

I have also learned that documents review is a systematic procedure for evaluating and reviewing documents both electronic and printed materials (Bowen, 2009). In this regard, I requested copies of printed and electronic documents from school leaders. In avoiding voluminous documents from schools that may include information that is not relevant to this study, I then decided to request specific documents that presumably were going to provide me with relevant data. I had expected information that was related to developments that resulted in decisions and activities of school leadership from both schools geared towards transforming schools into learning spaces. There was a list that I sent to both schools requesting having electronic copies of school policies, school development plans (SDPs); school improvement plans (SIPs); staff, school governing body (SGB), parents and school development team (SDT) minutes; stock registers; vision and mission statements, as well as incidents reports. The analysis of these documents entailed selecting, finding, appraising and synthesising data (Bowen, 2009) from a variety of documents on request that were available at that time. Presumably, the school policies should be setting the direction for the kind of transformation that is in progress in these two rural secondary. I expected to also have access to minutes from 'SDPs', 'SIPs', 'SDTs', 'SGB' and that of staff meetings to have contents that are related to the kind of transformation these secondary schools are known of.

The documents that I received for analysis purposes from Sizwe secondary School were in the form of hard copies that included minutes from the past three years meetings of staff, school governing body and parents. Included in these documents were also vision and mission statements, as well as school improvement plan (SIP). Notably, after analysing all the documents that I had access to, only the aforementioned had relevant information for this study. Meanwhile, Themba Secondary School documents that I received as hard copies for this study included 'SIP', mission and vision statements, as well as 'SGB' minutes book. Although observations are part of data generation instruments, but I became an eyewitness in the recent break-ins and vandalism in 2021 when I went to conduct semi-structured interview with the school leader. The above-mentioned documents were the only ones available; most were missing, and others destroyed on the day of my visit.

### 4.6 Data analysis

After receiving hard copies of documents for reviewing purposes from each school that I had initially requested to have access to, I immediately read them repeatedly before face-to-face semi-structured interviews with participants commenced. I did this activity in order to make sense out of the content of each document. As I did this activity, I concurrently, developed domains that are attributed to the research questions that I am well acquainted with. While I was embarking on this exercise, I always considered a theoretical understanding of learning spaces, the boundaries and context for this case study. In essence, Stake (1995) and Yin (2018) are of a view that when boundaries of the case are neither established nor well-articulated and the context not considered, the case will be too broad, thus, making it unclear and unmanageable. Since this is the case, all the steps that I took as this inquiry was progressing, are within the parameters of the exploratory qualitative case study as determined above in this chapter.

With all the documents at my disposal, I reviewed sets of documents from both schools separately starting with mission and vision statements and thereafter, other documents followed. I decided to review documents separately so that I can understand the degree of the impact of the contents of these documents in the successful transformation of each secondary school despite complex rural conditions that were at play. However, the discussions became holistic with respect to boundaries of time, space and the context of this case (Miles & Huberman, 1994). My decision to begin with reviewing mission and vision statements was because I was under the impression that these statements were the embodiments of broader objectives as the reminder to every individual who is a member of the school community to thrive towards achieving the main aim. As alluded to by Gurley, Peters, Collins and Fifolt (2015), the value of these fundamental statements encourages and enhances shared commitment among stakeholders to the process of school transformation and improvement.

After I had developed domains as indicated by Hill (2012) on how to do it, I use them to construct core ideas that were related to the relevant research question. I did this activity after I had reviewed each domain in the form of text segments, to ensure that there was consensus in the ideas that enabled the next step to begin. Following the review of each domain, I then identify regularities, relationships and differences across domains from other documents which were tantamount to cross analysis. While cross analysis was ongoing, I then grouped similar core ideas together which I clustered under the headings with similar units of meanings or phrases as categories. This

approach of categorising qualitative data is also indicated by scholars (Bowen, 2009; Ozuem, Willis & Howell, 2021) when elaborating on qualitative data analysis practices.

At a certain stage while I was reviewing documents, the time became ripe to conduct semi-structured interviews. In fact, the participants had indicated the dates that I could come to conduct interviews with them. I always reminded each participant a day before that I was going to conduct the interviews. Fortunately, the participants were cooperative in a manner that they informed me timeously on the specific times that they were not committed to any other school activities. After each semi-structured interview session was completed, I immediately transcribed each audio-recorded voice *verbatim* as all participants had granted me with permission to do so. I then immediately began with the process of analysing data. However, before I embarked on analysing semi-structure interview transcripts, I had to be consistent in setting aside my assumptions, beliefs and values in ensuring that my biases did not interfere with the discussions. I also took this position throughout this process of analysing qualitative data with an understanding that the analysis is guided by specific set of objects that were already established and in place and the interpretations of raw data.

Before I read each raw text in detail, I had to go through preparing this raw data that sometimes others refer to it as 'data cleaning' (Thomas, 2003, p. 5) by inter-alia formatting and relating it to the research questions. After I had generated data from semi-structured interviews with the participants, I had to immerse myself in this data. I did this firstly, so that I can familiarise myself with the dominant issues across different sets of data. This exercise enabled me to identify and highlight relevant sections, using different colours and shades the different units of analysis or domains in the form of text segments. Each highlighting colour represented the research question that the domain seemed to be related with. I followed the same procedure with other transcribed semi-structured interview data. Having a clear knowledge and the understanding of research questions to be answered, I was able to highlight with the same colour the units of analysis or text segments that bore similar concepts with other text segments across other transcripts. There were instances where I highlighted text segments or domains that seemed to be attributed to a specific research question, not necessary carrying the same ideas as other text segments from other transcripts. The intention was to ensure that the discussions embodied different ideas that seemed to answer the same research question.

The next step that I took was to copy and paste the highlighted text segments into a prepared excel sheet on a computer that seemed to be related to the research questions. This was followed by establishing categories that I kept on reviewing and refining until I got the essence of knowledge that each category was bringing. The next step was to reshuffle categories in a manner that concrete ideas emerged by linked them with other categories where themes had emerged. I then assigned shorthand designators to each theme in the form of phrases for meaningful presentation of data. Overall, the approach that I employed in reviewing documents and the qualitative data analysis on semi-structured interviews are undoubtedly, an iterative process. In my view, the rigorous analysis of documents had combined elements of thematic analysis as indicated by scholars (Braun & Clarke, 2006; Lincoln & Guba, 1985) and inductive content analysis (Elo, Kääriäinen, Kanste, Pölkki, Utriainen & Kyngäs, 2014; Strauss & Corbin, 1990). Notably, the approach that I used to analyse data from documents and interview data was to familiarise myself with the contents of data, identify text segments that were later organised into categories resulting in emerging themes. The aspects above are the epitome of thematic data analysis as indicated by Braun and Clarke (2006) with similar features to Lincoln and Guba (1985).

Open coding that I used was data-driven after I had immersed myself in the data during the familiarisation stage with the contents of interview transcripts that assisted me to develop domains (Hill, 2012). Moreover, I also employed constant comparative methods as indicated by Glaser and Strauss (1967) in order to construct core ideas (Hill, 2012). I repeatedly compared the main ideas across all transcripts from both schools within each domain in order to refine and cluster similar main ideas together for representing a category (Vears & Gillam, 2022). The critical activities of developing data driven domains, constructing main ideas and do cross analysis for comparing core ideas across transcripts including document reviews, are indeed, the inductive data analysis dimensions (Hill, 2012; Vears & Gillam, 2022).

Approach that I used in organising data into categories that were aligned to research questions is an epitome of an inductive content analysis. In this regard, I was analysing qualitative data while I was guided by specific research objectives to extensively condense raw data into summary format (Thomas, 2003). Thereafter, I established links between the research objectives and the condensed summary from raw data. This approach allowed me to discuss the findings after I had identified dominant issues that informed the emerging themes inherent in raw data. I maintained this pattern throughout the qualitative data analysis by being focused and careful, re-read and reviewed data multiple times as indicated by Fereday and Muir-Cochrane (2006). It was at that

point that I ascertained whether to continue or to put aside each document. This activity was critical for making sense out of the data at hand (Merriam, 1998). Furthermore, it was important to determine the authenticity, accuracy and credibility of the selected documents as indicated by Bowen (2009).

I noticed that the preparation phase of documents for inductive content analysis (Elo & Kyngäs, 2008; Thomas, 2003) and that of familiarising with data in thematic analysis (Braun & Clarke, 2006) seemed to be equivalent. I found that the same step that followed inductive and thematic data analysis of generating the codes, defining and reviewing the emerging themes is the same set of interventions going towards producing a report of the findings. Notably, I employed this approach immediately after receiving documents from both schools and prior to conducting semi-structured interviews. Immediately after receiving volumes of copies of documents from each school, I started skimming each document to get a glimpse of the relevancy of its contents to the research question. It was at that point that I ascertained whether to continue or to put aside that document. This activity was critical for making sense of the data at hand (Merriam, 1998). Furthermore, it was important to determine the authenticity, accuracy and credibility of the selected documents as indicated by Bowen (2009). Subsequent to making sense of data, I engaged on the comprehensive process of coding data and the identification of categories that resulted in themes emerging as scholars (Braun & Clarke, 2006; Elo & Kyngäs, 2008) have indicated. While this data analysis process was unfolding, I was concurrently establishing the meaning of each document and its contribution to dominant issues being explored.

With the guidance from inductive data analysis approach, I then used constant comparative practice (Glaser & Strauss, 1967) between data from semi-structured interviews and document analysis. With this comparative practice, it was a back-and-forth interplay within and across data from transcripts while constantly checking and re-checking emerging codes and concepts. The purpose for this exercise was to organise concepts that seem to bear similarities, differences and patterns (Bowen, 2008) for the presence and relevance of categories. I followed this practice for each school separately from each other, but ultimately, I merged separated categories into single entities; hence, they were undoubtedly complementary. Thereafter, I then re-organised and re-engineered categories into themes that were responding to the research questions. While this process was unfolding, I kept on asking questions of what is similar to or different from data that was generated from semi-structured interviews and documents reviews. I also had in hindsight, the kind of ideas mentioned from both the analysed documents and interviews data whilst

concurrently weighing the degree in which they relate to research questions. The approach of this comprehensive data analysis made me realise that the documents reviews was instrumental in refining ideas and provided boundaries for the relevance of the themes to the research questions.

An overview of applying qualitative thematic and inductive data analysis approaches above is revealing that inductive qualitative data analysis is subservient to thematic analysis. I found that thematic inductive data analysis method merged both approaches of data analyses (Lincoln & Guba, 1985). The data analysis approach that I employed seemed to be skewed in favour of thematic analysis that was apparently dominant. Nonetheless, inductive data analysis assisted me to develop the summary of themes emanating from emerging categories that are based on specific text segments of raw data (Thomas, 2003). The positive contribution of inductive data analysis to this study is that it is driven by the data itself rather than theoretical top-down analysis. I found this framework of analysis useful toward achieving the objectives of this study.

The rationale for employing both thematic and inductive data analysis is that although the processes are similar, but consequently, thematic data analysis is distinct from other qualitative data analysis. According to Braun and Clarke (2006), thematic data analysis is more than just summarising data, but, it goes to the extent of interpreting and making sense of it. Comparatively, these scholars found that other analysis approaches do not look beyond what had been written or what the participants have said. However, thematic analysis allows moving a step further but not necessarily in a linear fashion (Braun & Clarke, 2006). It is therefore, on these grounds, as discussed above, that I have discovered substantial information that is attributed to school leaderships and teachers from both secondary schools innovatively creating learning spaces that best support the 21st century learning despite complexities of rurality at play.

### 4.7 Enhancing trustworthiness of this study

The general understanding and concerns that qualitative research tends to be ethically more complex, subjective and contextual necessitates enhancing the authenticity and rigour of this study. It is important to identify and discuss dimensions that address these concerns and others. The dimensions demonstrate the integrity and competence in assessing and enhancing the trustworthiness of this qualitative study. In enhancing the trustworthiness, I ensured that this study remains credible, transferrable, dependable, and confirmable.

### 4.7.1 Credibility

Credibility refers to the extent to which the phenomenon under study represents the experiences that the participants shared with the researcher (Cohen & Crabtree, 2008). In order to make this study credible, I managed to provide in-depth description of the context in which the study was conducted (Long & Godfrey, 2004), the participants and the emerging themes that illuminated the findings of this study. I also discussed rural settings extensively in which, the purposively selected schools are located, the environment and the dynamics of rural schools, specifically secondary levels. I also provided full disclosure about how purposive sampling of the participants was done (Etikan, Musa & Alkassim, 2016).

The significance of the information that the participants shared with me is the divergent ways of understanding the phenomenon under study and the influence it had on their activities. These provisions became the enablers of generating insights into multiple aspects that resulted in school leaders and teachers successfully creating learning spaces that best support 21st century learning for learning in the context of rurality. I am convinced that the disclosure of these above issues unequivocally contributed to the credibility of this thesis. Credibility of the study indicated is among the criteria that contribute to the trustworthiness of the findings (Lincoln & Guba, 1985; Zitomer & Goodwin, 2014). The findings that I presented in Chapter Six are grounded and supported by data from participants that I initially immersed myself in their contexts. Following immersing myself with empirical data, I was able to identify segments of meaning from the recorded *verbatim* voices from the participants. I then decided to send to each relevant participant an electronic copy of interview transcript that I had conducted for accuracy or more clarity on the information provided. The findings that I presented are based on the participants' voices that provided rich data about their experiences, the context and background environment of the natural setting in which they exist.

### 4.7.2 Transferability

Transferability is the extent to which the findings of an empirical study can be transferred to other contexts or groups (Polit & Beck, 2012). I catered for transferability by ensuring giving valuable and clear descriptions of context of the area where the study was conducted, how the selection of the research sites and the participants was done, as well as the descriptions of the participants' characteristics. Furthermore, I used verbatim quotations from transcribed data as evidence to

support the claims that I was making about the participants' experiences and the conditions of the inquiry in order to avoid biases (Polit & Beck, 2012).

### 4.7.3 Dependability

Dependability encompasses the consistency of data analysis that could be repeated (Lincoln & Guba, 1985). The stability of the data for this thesis in ensuring dependability was already addressed by having to generate data close to the participants' everyday life realities as I conducted semi-structured interviews in their workplaces (Goldkuhl, 2019). The advantages is based on the fact that the participants were enabled to express themselves freely and provided valid account of what they know and do regarding the issues of learning spaces and their creation. In this regard, I related the participants' full disclosure and the articulation of their innovative strategies of creating learning spaces. At the time when I made my first visit to the schools for recruitments, I clearly explained the purpose of conducting this study, and how I wanted to conduct it the manner in which I aimed to. They all expressed clear understanding of what the study sought to do and achieve.

I employed an approach of crystallising data from semi-structured interviews with the review of documents from each participating school. Crystallisation entails using multiple methods of data generation and data analysis (Golafshani, 2003). I provided a detailed explanation of how I generated data that included instruments such as semi-structured interviews and the reviews of documents. The review of documents assisted me to corroborated the information from semi-structured interviews for overall interpretation of the findings (Coleman, 2022). Thus, crystallisation enhanced the rigour of this thesis in terms of dependability. Overall, because of the representation that I have made thus far, it is addressing the dependability of this study as a criterion postulated by Lincoln and Guba (1985) among others. It is of utmost importance that I ensure the stability of the data over time and under various conditions for dependability purposes of this study. In view of this dependability, I maintained consistency in using data from participants during the analysis process that is in line with qualitative research design. In view of the strategy that I employed of providing explicitly thick descriptions of the participants' experiences and activities regarding the creation of the learning spaces, I am confident that I have provided a meaningful account of their understandings of the innovations that they were involved in. The reality is that the thick description of the participants, the context and the research process

have all enhanced the dependability of the findings. I am convinced that the presentation of the findings in this thesis have met the criterion of dependability.

### 4.7.4 Confirmability

Confirmability refers to the extent to which the findings reflect social realities of the participants and not that of the researcher (Lincoln & Guba, 1985; Patton, 2014). With regards to confirmability, I strictly provide an electronic copy of transcribed data from face-to-face interviews and asked my participants if this is what transpired in our interview. This is an opportunity of providing participants with transcripts so that each of them can make corrections or clarity if the need arises. The aim of this activity is to ensure that the interpretation process is grounded on the data rather than to base it on my own viewpoints. Other scholars describe confirmability as a process that demonstrates how interpretations and conclusions reflect the views and experiences of the participants (Tobin & Begley, 2004). The other technique that I used during the course of the interviews was that of member-checking. This technique entails a researcher constantly checking with the participants if his/her understanding of the statement that is made is consistent with the meaning that the participants portrayed.

## 4.8 Ethical issues

Prior to conducting the research, I applied for ethical clearance from the Human and Social Sciences Research Ethics Committee (HSSREC) of the College of Humanities in the KwaZulu-Natal University. I then applied to the KwaZulu-Natal Department of Education (KZNDoE) for permission to conduct the study in its schools. This permission request was duly granted. A formal letter granting me permission to conduct this study was written. I then included that letter as part of my application for ethical clearance. HSSREC wanted to know in advance that the KZNDoE as the main gatekeeper had granted permission for the study to be undertaken.

After the KZNDoE had agreed that I could access its schools, I then visited the sampled schools to introduce the study to the principals. I explained to the principals what the study entailed, what the aims and objectives were. I also explained to them the whole sample in terms of who the participants are that I needed in order to elicit their views and experiences. The sample size consisted of school principals, deputy-principals, departmental heads (DHs) and teachers who did not occupy any formal leadership positions in each secondary school. In other words, senior

teachers and master teachers were deliberately excluded from the sample. After I had introduced the study to the principals, I then asked for the opportunity to address teachers at the time that was not going to cause any disruption. I then recruited the participants by making brief presentations in staff meetings about this study and I gave them consent forms to be signed by those who were willing to participate.

It is important that as researchers we understand ethical considerations and dilemmas that may crop up from time to time. One of the ethical principles is that of respecting the autonomy of the participants and their rights to voluntary participation and confidentiality (Morse & Field, 1996). In compliance with all these rights, I ensured that I explained all these rights, including their rights to participate and also to withdraw from the study at any stage of the research process. I also assured them of confidentiality and anonymity. I also explained that nobody will know what they had each told me and also that nobody will have access to the transcribed data other than myself and my supervisor.

### 4.9 Limitations of the study

Every research has some kind of limitations. What is important is that each researcher should be aware of such limitations, and should have some strategies to mitigate those limitations so that the findings will remain trustworthy. Similarly, this study has some limitations emanating mainly from the complexity of rural environments. Limitations can be understood as matters that arise in a study that are out of control by the researcher no matter how well a study may be conducted (Simon & Goes, 2013). As I have indicated above, what is important is that a researcher has to always find some strategies to minimise the effects of the limitations. The very nature of qualitative research is that the findings cannot be extended to a wider population because it occurs in natural setting (Wiersma, 2000). The design and the sampling techniques suggest that the sample is not representative of the whole population. As such, the findings cannot be said to be applicable to the whole population of teachers and schools in the province or in the education district (Cohen et al., 2011; Hodkinson & Hodkinson, 2001). This research method does not lead to statistical generalisation (Bailey, 2007). In overcoming this limitation, I successfully generated rich textual data from members of the school leadership of the two rural secondary schools. As I indicated in the trustworthiness of the findings section, I ensured that I provided a detailed explanation of all the processes that I undertook in the study.

## 4.10 Conclusion

This chapter has given a detailed account of the research methodology that was adopted for the study. A case study methodology was used in compliance with qualitative research designs. Qualitative designs are renowned for their ability to researchers to get an in-depth understanding of the phenomena. In this instance, the phenomenon is the participants' creation of learning spaces that support 21st century learning within the context of rurality. All methodological issues have been explicated in this chapter. The next chapter presents and discusses data that was generated using a variety of techniques/methods explained in this chapter.

# CHAPTER FIVE

# DATA PRESENTATION AND DISCUSSION

## 5.1 Introduction

In the previous chapter, I provided a detailed discussion of the research design and methodology that was used for conducting this study. This chapter presents and discusses data that was generated from school principals, a deputy principal, departmental heads and teachers through the use of semi-structured interviews and the review of documents. All the research proceedings were informed by the purpose of this case study. The purpose was to explore, unravel and describe what school leadership actually do to create learning spaces for the 21st century learning for learners in spite of rural contextual realities at play. This chapter addresses the main critical question of this study which is 'What does school leadership do in creating learning spaces for 21st century learning for learners in rural secondary school?' The approach of reporting the key findings from thematic and inductive data analysis of raw data is presented by using emerging themes as headings. Emerging themes are underscored by using *verbatim* quotes to authenticate the findings. Moreover, through descriptive analysis approach, this chapter presents responses to four critical research questions displayed in Table D below. Included in this table are four emerging themes and twelve sub-themes that are presented and discussed. The literature that was discussed in Chapter Two is not used in this first level of analysis and presentation of qualitative data, but it is injected in the discussion of findings in the next chapter.

## 5.2 Research questions, themes and sub-themes

Table D is the display of research questions in the first column with corresponding themes and sub-themes in the second column.

**Table A: Research questions, themes and sub-themes**

| RESEARCH QUESTIONS | THEMES AND SUB-THEMES |
|---|---|
| ➢ What does school leadership in rural secondary schools understand learning spaces for the 21st century learning for learners to be? | ➢ THEME 1: School leadership understanding of learning spaces |
| ➢ What does school leadership in rural secondary schools do in creating learning spaces for the 21st century learning for learners? | ➢ THEME 2: School leadership activities<br>Sub-theme 1: Motivating and encouraging Sub-theme 2: Supporting<br>Sub-theme 3: Organising learners into groups<br>Sub-theme 4: Using WhatsApp social media platform |
| ➢ What are the challenges encountered by school leadership in rural secondary schools in the creation of learning spaces for the 21st century learning? | ➢ THEME 3: Challenges hindering the creation of learning spaces<br>Sub-theme 1: Scarce educational resources<br>Sub-theme 2: No change attitude<br>Sub-theme 3: Lack of parental involvement<br>Sub-theme 4: Financial constraints<br>Sub-theme 5: Burglaries, vandalism and theft<br>Sub-theme 6: Unreliable electricity supply. |
| ➢ How does school leadership in rural secondary schools addresses challenges encountered in the creation of learning spaces for the 21st century learning? | ➢ THEME 4: School leadership intervention measures to address some challenges<br>Sub-theme 1: Change attitude<br>Sub-theme 2: Strengthening security<br>Sub-theme 3: Replacement of stolen property<br>Sub-theme 4: Teachers' developmental workshops |

**Discussion of the emerging themes**

This section presents and discusses themes that emerged from data that was generated through semi-structured interviews with thirteen participants and documents reviews. The four main

themes are aligned to the research questions. Furthermore, three out of four themes have sub-themes with direct quotes from participants' voices that better explain and authenticate each theme.

### 5.2.1 Theme 1: School leadership understanding of the learning space

Before getting to know what school leadership actually does in creating learning spaces for the 21st century learning for learners in rural setting, it is important to know their understandings of this new concept of learning space or spaces. Generally, the understanding of learning spaces may inform the choices of activities that school leadership employs in creating learning spaces for the 21st century learning for the learners. In this regard, two out of eight participants demonstrated an understanding of a learning space as any learning environment that is created and is conducive for learning to take place. Mr Pikoli had the following to say:

> *My basic understanding of a learning space is that it is any learning environment that is created to be conducive for learning to take place* **(Mr Pikoli, a teacher at Themba Secondary School).**

Expressing similar views, Mr Zulu said:

> *For me, a learning space has more to do with the learning environment... that must be conducive for learning to take place.*

Three out of eight other participants understood a learning space as a classroom with arranged seating to enable learners to learn. Miss Zikode expressed herself as follows:

> *It is a classroom that is conducive for learning, where learners are enabled to learn and discover something or information on their own when seats are arranged in rows.*

Similarly, Mrs Dube shared a similar understanding that a learning space is a classroom with arranged seating. This is what she said:

> A *learning space is a classroom that is well set, which is conducive for learning... It has a well-arranged seating plan...* **(Mrs Dube, a Departmental Head at Themba Secondary School).**

Furthermore, Mr Zungu's understanding of a learning space is that it is any space for teachers and learners to communicate and engage each other in an organised seating arrangement. Emphasising a learning space as being made up of an orderly seating arrangement, Mr Zungu averred as follows:

> *It is a space whereby teachers communicate and engage learners when teaching and learning is taking place in organised row seating in a classroom.*

The last three out of eight participants indicated that a learning space is any space where learning can take place that can either be inside or outside the classroom, formal or informal. This view contradicted that of Mrs Dube and Mr Zungu above. Mr Ndomela said:

> *My understanding of a learning space is the space where teaching and learning takes place, and it is either in a classroom or outside, as well as formal or informal.*

On the same breadth, Miss Hlela understood a learning space as a space where learning continues to take place through using technology gadgets even if learners are not sitting in a classroom. The emphasis is on the use of technology gadgets that extend learning from classroom to online learning outside of the classroom. She said:

> *A learning space is a space that supports a form of learning that uses technology gadgets, sometimes, for online learning in order to assist learners to acquire information as fast as they possibly can, even if they are not sitting in a classroom* **(Miss Hlela, the Principal of Sizwe Secondary School).**

Mr Makhoba, the Principal of Themba Secondary School understood that a learning space can be defined in different ways because of traditional learning and integration of technology in schools. He perceived a learning space to be a space that supports learning to take place not only in schools, but also outside the school. For Mr Makhoba, a learning space is too vast, incapable of being defined in any rigid manner as it changes quite often. Mr Makhoba made the following utterances in this regard:

> *A learning space can be defined in different ways compared to the olden days. The reason of different ways of defining a learning space is the integration of technology. Previously, learning was taking place in classrooms only with duster, chalk, the teacher and a book if it was available. Nowadays, learning takes place in spaces other than classrooms. A learning space supports learning that takes place; it is too vast, inexplicable and changes quite often.*

It is worth noting that there are divergent understandings of learning spaces from the participants' perspectives. Two out of eight participants from the same school referred to a learning space as a learning environment. The other two noted to be from different schools, refer to a learning space as the classroom that is broadly known to be where learning takes place. Indeed, classrooms are usually to be physical settings that are designed for outdated teacher-centric content, pouring into passive learners teaching practices. On the same breadth, emerging from the participants' voices is the significance of understanding a learning space as a space where learning takes place. It is worth noting that four out of eight participants have this common understanding of a learning space as any space.

### 5.2.2 Theme 2: School leadership activities

In this theme, the question I sought answers for was about the activities that school leadership engages in, in creating learning spaces for the 21st century learning. Three major activities emerged that school leadership actually performs in creating learning spaces for the 21st century learning for the learners. These activities are that school leadership motivates, encourages, and supports the teachers to integrate technology when teaching. The kinds of school leadership activities are informed by prompts from individuals from each school when they took initiatives to be innovative without being instructed, motivated or developed to infuse technology in their teaching practices. Initially, they were organising learners into groups, and using WhatsApp social media platform to interact with learners beyond school contact time. These individual activities were prompts among others that preceded school leaderships' actual activities as mentioned above.

I begin by presenting and foregrounding what school leadership actual activities were as responses to stimuli (*metaphor*) where individuals had decided to initiate innovations at their own risks by infusing technology in teaching and learning. The initiatives firstly include organising learners into groups for collaborative learning in the classrooms. Secondly, they created WhatsApp groups of learners who have or can assess smartphones for WhatsApp social media platform that can be used to interact and engage with learners for a variety of reasons beyond school contact time.

#### 5.2.2.1 Sub-theme 1: Motivate and encourage

Some of the activities highlighted by the participants in this study regarding what school leadership is doing to create the learning space, included motivating, encouraging and supporting teachers to use technology in their teaching. Three participants emphasised motivating and also encouraging teachers to use new ways of teaching by infusing technology during teaching and learning. Miss Hlela, the Principal of Sizwe Secondary School said:

> *Since we are in this era, in our staff meetings, I keep on trying with the support from school leadership to motivate and encourage all teachers to make use of technology in their classes during teaching and learning time in order to enhance the learning experiences of the learners.*

Likewise, Miss Zikode, a Departmental Head at Sizwe Secondary School expressed herself as follows:

*Most teachers are younger than me and are new to the system. They are innovative in teaching and mostly integrate technology. I keep on motivating and encouraging them to do so as I am an older generation. I do not have much knowledge of integrating technology in teaching. I encourage the younger teachers to use technology in their classes when teaching.*

Mr Pikoli, a teacher from Themba Secondary School explained that the principal secured sponsorship for staff developments to motivate and encourage teachers to use new ways of teaching that integrate technology in their classrooms. He said:

*Well, the SMT motivates and encourages us to use technology in teaching. The principal got some funding for us to attend workshop about using new methods of teaching using technology. It is amazing what virtual practical and digital learning can do. Of course, we need more devices* **(Mr Pikoli, a teacher at Themba Secondary School).**

There is an indication from the three participants' voices that the emphasis of using technology in teaching is critical for the 21st century learning. Hence, people that are motivating and encouraging teachers to infuse technology in teaching are in different positions. This call appears to be from two participants that hold formal leadership positions in the same school and the other is an ordinary teacher from a different school.

#### 5.2.2.2 Sub-theme 2: Support to the teachers

The aspect of supporting teachers to integrate technology in their teaching emerged from five participants, also as an endeavour to enhance learners' self-centred approach. Mr Makhoba's supportive leadership activity standpoint is informed by the realisation that most teachers in the school were young and 'addicted' to technology. He explained that he requisitioned technological resources like laptops, data projectors and the installation and servicing of Wi-Fi facility. Apparently, what the principal was doing was but one of the activities by supporting teachers in taking initiatives to be innovative in their classrooms by infusing technology in their teaching practices. It is in this regard that Mr Makhoba said:

*It is surprising that the types of teachers and learners we have in schools are technology literate and addicted to it. In support of innovativeness from five teachers that put on the table their proposals of infusing technology I their lessons. what I normally do is to provide them with all the materials they request such as laptops, data projectors and Wi-Fi facility to connect to internet. Wi-Fi enables teachers and learners to access relevant global information that enhances learners' self-centred learning.*

The principal as the most senior member of the school leadership at Themba Secondary School took an initiative to get sponsorship. The purpose of the sponsorship that he secured from Gingqa Company was to organise teacher professional developmental workshop on new approaches to teaching in the 21st century. Three participants revealed that their principals supported their initiatives of innovative ways of teaching in the 21st century by organising sponsors for them to be well acquainted about new pedagogical practices for the 21st century learning. Furthermore, the principal provided teachers with the necessary resources they required in order to actualise what they learned from the sponsored workshop. Mr Zulu then said:

> *The support from the principal was to organise a sponsor from Ginqga Company to develop teachers to be acquainted mostly with teaching in the 21st century. Moreover, the support also from the principal is that whatever we requisite such as the data projector. We receive such without issues because of an understanding that it is for teaching and learning. He realised from the workshop that challenges of lacking technology-based instruments were the most important aspects to address. Hence, he provides us with the necessary resources we requisitioned* **(Mr Zulu, a teacher at Themba Secondary School).**

In the case of Themba Secondary School, the kind of support that teachers once got from the former and late principal was to organise a professional developmental workshop that was conducted by the Mint Project. This project was designed to develop teachers to understand and use new approaches of teaching and learning in the 21st century. In this regard, Mr Zungu a teacher from Sizwe Secondary said:

> *The initiative of support from the principal was prompted by our request from myself with the support from my colleagues, with whom we had started using technologies in the classrooms. As a gesture from the principal in embracing our request, he began by organising a professional developmental workshop for all teachers that was conducted by Mint Project. We were informed about the new ways of teaching in the 21st century and how to use them in our classrooms.*

Mr Zulu from Themba Secondary School revealed that their principal secured sponsorship but, in this case, for the installation of Wi-Fi facility. He said:

> *Our school had a Wi-Fi sponsor that was organised by the principal to support us to venture into contemporary ways of teaching and learning. Unfortunately, the contract has expired.*

Another kind of support from the school leadership is the provision of teaching and learning materials required by the teachers. Miss Dlamini, a teacher from Sizwe Secondary School said:

*The only support from our school is the swift provision of textbooks and other resources that teachers had requisitioned for which is not part of the whole school annual requisitioning process.*

In view of all the above participants' voices, five of them indicated that the support was the most prevalent activity that school leadership was providing in ensuring that the teachers continued with their innovative ways of teaching in the new era of the 21st century. Indeed, any kind of support from school leadership as alluded to by the participants was given to the teachers when there were activities that were already taking place. Evidently, the initiatives for innovative ways for new approaches to teaching for the 21st century learning have prompted school leadership in various positions to motivate and encourage the rest of their staff members to follow suit. Of course, these leadership activities were undertaken concurrently with various approaches of support measures in recognising and appreciating the endeavours of innovations from small groups of teachers in each of the two schools.

In view of what transpired above with regards to the school leadership activities, it was therefore, prudent to inquire about the impact that they have on the teachers. The question that I sought answers to from the participants not occupying formal leadership positions, was about what they were actually doing in creating learning spaces for the 21st century learning for learners. The next two sub-themes emerged as a response to my question. Their responses indicated that they included organising learners into groups in classrooms and creating WhatsApp groups of learners with or have access to smartphones for various reasons. The details are presented below under 5.2.3 and 5.2.4 respectively.

#### 5.2.2.3. Sub-theme 3: Organising learners into groups

Learners in most cases were organised into groups in the classrooms as one of the activities that the teachers engaged in for a variety of reasons. In this regard, seven out of nine participants mentioned that they organised learners into groups in the classrooms for different purposes. Miss Zakwe expressed the idea that those learners that seemed to be struggling academically, sat together with those that were perceived to be better in understanding the subject content to form inclusive groups. She said:

*I try to group learners in ways that those that seen to be weak are grouped with the ones that seemed to be better. I do this exercise with a belief that they can help each other* **(Miss Zakwe, a teacher at Sizwe Secondary School).**

Mr Zungu mentioned that he organised learners in the classrooms in such a way that they formed groups. He grouped them with an intention of providing them with opportunities to communicate and share information and knowledge. This enabled them to participate fully in the classroom activities. He expressed himself as follows:

> *I divide and group learners with an intention that they participate fully in the class activities and communicate with each other. They then choose one person to do a presentation of group solution to class for a particular problem* **(Mr Zungu, a teacher at Sizwe Secondary School).**

Miss Shinga also organised learners to complete work that she had given them in groups in the classroom. The role she played therein was then to check if learners were still doing what she expected them to do. She explained:

> *I usually form groups in my classes and let them work independently as groups. What I then do is to go to each group and check whether they are doing what I told them to do because when I do not do that, sometimes they just play* **(Miss Shinga, a teacher at Sizwe Secondary School).**

Miss Mbhele's approach in organising learners in groups was that she gave the learners the autonomy to choose where to sit, in any order and with whom to do classwork: She averred:

> *I organise learners into groups, but not in any particular order. They are free to choose where to sit and with whom to form a group and sit anyhow* **(Miss Mbhele, a teacher at Sizwe Secondary School).**

In the same vein, Mr Pikoli also organised learners into groups, but sometimes in pairs in order to promote collaborative learning. He expressed himself as follows:

> *I arrange learners in my classes to sit in groups and in some instances in pairs. The reason is that I am a big fan of collaborative learning where learners actually learn among themselves. I plan my lessons in different ways that warrant the necessity for them to find solutions either in groups or in pairs. However, I use to have squabbles with my colleagues because of changing the traditional row seating arrangements of the h learners* **(Mr Pikoli, a teacher at Themba Secondary School).**

Miss Hlela also used a similar practice of organising learners to sit either in groups or sometimes in pairs, depending on the kind of the lesson that has been planned for the day. She averred:

> *I usually organise learners to do the tasks in different ways, depending on the lesson that will be taught on the day. Sometimes, they sit in groups, sometimes in pairs to do the activities using either cell phones or making use of the laptop for the information I had given them* **(Mss Hlela, the Principal of Sizwe Secondary School).**

Furthermore, I posed a follow-up question to Miss Hlela as the Principal of Sizwe Secondary School with regard to a regulatory cell phone policy. I inquired about the availability of this policy and a summary of its contents. She responded by saying:

> *Ever since teachers began using cell phones in teaching and learning, we have never experienced any cell phone related challenges although we do not have a cell phone policy at this stage. However, we are in a process of developing a more comprehensive school policy* **(Mss Hlela, the Principal of Sizwe Secondary School).**

Mr Sokhela organised his class in two ways that were dependent on the type of the activity that the learners would engage in. In some instances, learners remained in normal traditional row seating arrangement and sometimes, in groups. The type of a lesson informed each style of organising learners and the activity that the learners would be completing in a classroom setting. He shared his sentiments as follows:

> *It differs with a lesson and depends on the type of an activity. Sometimes, I will have a normal teaching arrangement where learners sit in rows facing the front of the classroom. In other lessons, I organise my learners in groups and sit in such a way that they can see what is presented to them* **(Mr Sokhela, a teacher at Sizwe Secondary School).**

There is an indication from the participants' voices from both schools that it was a common practice to organise learners into groups in classrooms. Apparently, the reasons for this kind of a practice varied from each participant. However, this practice of organising learners to learn in groups in a classroom setting was an indication that either knowingly or not, they were providing learners with opportunities to develop certain skills for the 21st century learning. Notwithstanding this reality, organising learners to sit in groups, took place before the eruption of COVID-19 pandemic. This practice has been hindered by the introduction of safety protocols that had to be observed during the outbreak of the pandemic. One of them was the social distancing that entailed that individuals must sit or stand one and the half metres distance between them. This was a mandatory exercise to mitigate the spread of this deadly virus. Whilst seven out of thirteen participants organised learners in groups for collaborative learning, the last two participants still believed and practised the outdated and standardised traditional row seating arrangement of learners in classes. This is undoubtedly a teacher-centric didactical teaching and learning approach. Miss Dlamini's approach to teaching and learning is a testimony to this effect and she said:

> *Learners sit in rows facing the front of the classroom. Depending on a lesson, sometime, I use a projector simultaneously with chalkboard. I move around to check if all learners*

*are concentrating on the lesson as I play videos* **(Miss Dlamini, a teacher at Sizwe Secondary School).**

The row seating arrangement of learners in the classrooms was also an approach that Mr Sokhela believed in. He had the following to say in this regard:

*I always have a normal teaching arrangement where learners sit in rows facing the front of the classroom* **(Mr Sokhela, a teacher at Themba Secondary School).**

To this end, the grouping of learners in a classroom setting is one of the 21st century teaching practices. The data above indicates that teachers who transformed teacher-centric to learner-centric pedagogical practices were in the majority compared to those who stuck to the traditional outdated teacher-centric practices. In substantiating this viewpoint, I can say that seven out of nine teachers organised learners to learn collaboratively by sharing information within group settings. It is noteworthy to acknowledge that, whilst learners were organised to learn in groups, subtly and concurrently, a learning space for the 21st century was slowly being created either wittingly or otherwise.

#### 5.2.2.4 Sub-theme 4: Using WhatsApp social media platform

This sub-theme emerged from a question that sought to uncover activities that teachers performed for the learning to take place everywhere, anytime. Teachers used WhatsApp social media platform to communicate among themselves and for teaching and learning. This social media platform among many such as Facebook and Instagram, seemed to be popular because it was comparatively used the most. Indeed, it is worth acknowledging that whilst these activities were done, it becomes compulsory for the co-creation of a learning space that best supports the learning modality the participants are pursuing. It emerged from the participants' one-on-one interviews that WhatsApp social media platform was among the many that enabled the interactions and engagements between teachers and learners in the classrooms and the interactions were extended beyond schools' contact time. In this regard, nine out of thirteen participants created WhatsApp groups for their learners for a variety of purposes.

Miss Zakwe is one of those nine participants who created WhatsApp group for her classes to use in sending work to learners prior to face-to-face engagements and interactions with them. In acknowledging that individual learners' needs and the levels of understanding differed, based on the work that learners had done before coming into the classroom, she taught in a way that no learner was left behind in attaining lesson objectives. She normally gave a summary of the

information that was sent to the learners before her teaching period through WhatsApp facility. This is what she actual did in order to accommodate learners that did not have smartphones or access to these devices before the face-to-face engagement with learners in a classroom setting. This is what she said:

> *I created a WhatsApp group of all my learners from classes that I teach. I use it to give them work prior to teaching and learning for them to acquire information before they come to class. I then teach in such a way that I reach most learners' needs because some are very weak as their levels of understanding the subject content is not the same in each class. I also do take note of learners that do not have or access to smartphones where I normally start by summarising information that I had sent through a WhatsApp facility* **(Miss Zakwe, a teacher at Sizwe Secondary School).**

Meanwhile, Mr Zungu created WhatsApp group for his classes in order to assist learners to find solutions from past examination question papers. In most cases, he sent voice notes to learners beyond contact time because non-contact lessons are difficult to conduct in this rural area. Thereafter, he gave them solutions by posting them through a WhatsApp group facility. He said:

> *I created a WhatsApp group because in a rural area in which I am teaching, it is difficult to conduct non-contact lessons. I only do voice notes, do past examination questions and post them to the group. Thereafter, I give them feedback by posting solutions for self-evaluation when I have realised that most have attempted to find solutions on their own* **(Mr Zungu, a teacher at Sizwe Secondary School).**

Miss Dlamini used a WhatsApp group of learners she taught to continue teaching even beyond school hours. She communicated with each learner, encouraged learners to answer questions posted in the group and then gave a summary of the topic at hand through the same means of interaction. She had the following to say:

> *I have WhatsApp group with divisions that I teach. So, we communicate with each other and I encourage learners to answer questions posted by anyone in the group. I let them know that I am not the only one to provide solutions to questions in the group. I then give them a summary of the topic at hand through WhatsApp* **(Miss Dlamini, a teacher at Sizwe Secondary School).**

Mr Sokhela used WhatsApp group for his classes in order to send information to his learners remotely and for learners to find solutions on their own. Thereafter, he presented solutions to them after giving them sufficient time to find solutions on their own. Mr Sokhela was mindful of learners that were unable to access WhatsApp social media. He prepared hard copies for these learners to use at home. He expressed himself as follows:

*Most of the time, I prepare materials for all learners either as a soft or as hard copies. I make both copies because with a soft copy, learners are enabled to receive and use information via WhatsApp. In the case of learners that are unable to use WhatsApp for whatever reason, a hard copy becomes a solution when they are at home. The advantage of those with WhatsApp is that I am able to take pictures of particular questions, send them to learners and give them sufficient time to respond. After I have given them sufficient time for most of them to post solutions, I then present solutions to the questions* **(Mr Sokhela, a teacher at Sizwe Secondary School).**

Miss Hlela also used her WhatsApp group of learners to communicate with them, not only beyond school contact time, but even during the school days when she was unable to be physically present in a classroom. Noticeably, Miss Hlela is the Principal and in the context of South Africa, principals are inundated with administrative duties that sometimes compel teaching principals to not honour their teaching periods. She gave her learners instructions of what they must do in her absentia. She explained how it works:

*If I am not available, with WhatsApp group for my two classes, I use it to tell learners what to do when I am not physically present at school. In most cases, I spend most of the days doing administrative work and do submissions to the Circuit Office for compliance purposes* **(Miss Hlela, the Principal of Sizwe Secondary School).**

Miss Shinga's idea of a WhatsApp group of her classes is that it was for sending questions and to allow the learners to respond afterwards. In catering for the learners that did not have access to her WhatsApp group, hard copies of materials were handed to them during contact time. She then gave learners sufficient time to respond to questions sent to them through a WhatsApp group. When she realised that she had received a bulk of responses, she presented solutions to answers through WhatsApp as well. The following extract elaborates on this point:

*Most of the time, I prepare materials as hard copies for learners who have no access to my WhatsApp group, and as a soft copy for those who have access ...I send questions to learners in order to give them sufficient time to respond by posting their solutions. So, after noticing that most of them had completed the solutions, then I present the correct solutions to questions through WhatsApp* **(Miss Shinga, a teacher at Sizwe Secondary School).**

Mr Pikoli used WhatsApp groups of his classes to interact with learners either on one-on-one bases as some preferred or as groups beyond the classroom environment. He said:

*Well, the only method that I have employed is the use of WhatsApp group that I created for my classes. Learners therefore, do interact with me on one-on-one bases where*

*perhaps, it is not possible for them to just send questions on the actual group* **(Mr Pikoli, a teacher at Themba Secondary School).**

In the same breadth, Mr Zulu expressed a similar approach of creating a WhatsApp group for his learners as a means of communication and for the core business of doing activities beyond school contact time. In that regard, he sent the learners work to complete beyond school contact time. He said:

*I usually use WhatsApp as the only affordable means of communication in this area if there is information I needed from them or maybe, to share. Importantly, the core business of WhatsApp as far as I am concerned, is about subject matter more than anything. Mostly, I send activities that learners must do on their own at any time even beyond school contact time* **(Mr Zulu, a teacher at Themba Secondary School).**

A similar approach to the use of WhatsApp was adopted by Mr Ndomela. He said that he normally communicated and sent information to the learners in his WhatsApp group of learners. With the awareness that some learners did not have smartphones or were unable to access WhatsApp groups for a variety of reasons, on their return, he repeated all what was done when they were away. He expressed himself as follows:

*I created a WhatsApp group to communicate with the learners but, the problem is that only 30% of the learners have cell phones. I communicate with those learners with cell phones and among them are those who do not have data to engage with them. To avoid depriving learners of getting information such as those who do not have cell phones data, on their return to school, I start with what was done with those that had cell phones* **(Mr Ndomela, a teacher at Themba Secondary School).**

Noticeably, the participants interacted and engaged the learners for various purposes using WhatsApp social media platform among many. Almost all social media platforms, including WhatsApp probably needed data which was too expensive if one needed their services that may not be affordable for most parents. However, Mr Ndomela, Miss Shinga, Mr Sokhela and Miss Zakwe are the four out of nine participants that had created WhatsApp groups and had developed strategies to accommodate learners that did not have access to WhatsApp groups they had created. Unfortunately, the last four of the thirteen participants only interacted and engaged with the learners face-to-face in a classroom setting, without any innovations that enabled interactions beyond the four walls of the classroom.

#### 5.2.2.5 Findings from the documents' reviews

Documents reviews was part of the methods of qualitative data generation in this study. According to Bowen (2009), documents review is a systematic procedure for reviewing both printed and electronic documents. The documents are examined and their contents interpreted in order to gain in-depth understanding of the information contained. The meaning that data elicits is then used to develop empirical knowledge that is relevant for a study (Corbin & Strauss, 2008). In this case, it is about how school leadership created learning spaces for the 21st century learning for learners. Therefore, it is critical to analyse the vision, mission, goals and values as a form of guiding principles for transforming schools into learning spaces for the 21st century learning. The following extract, "**Figure 2**" below is the school vision and mission statements of Sizwe Secondary School. Understandably, the vision and mission statements are critical in the sense that they seek to indicate the purpose and the direction that the school is pursuing.

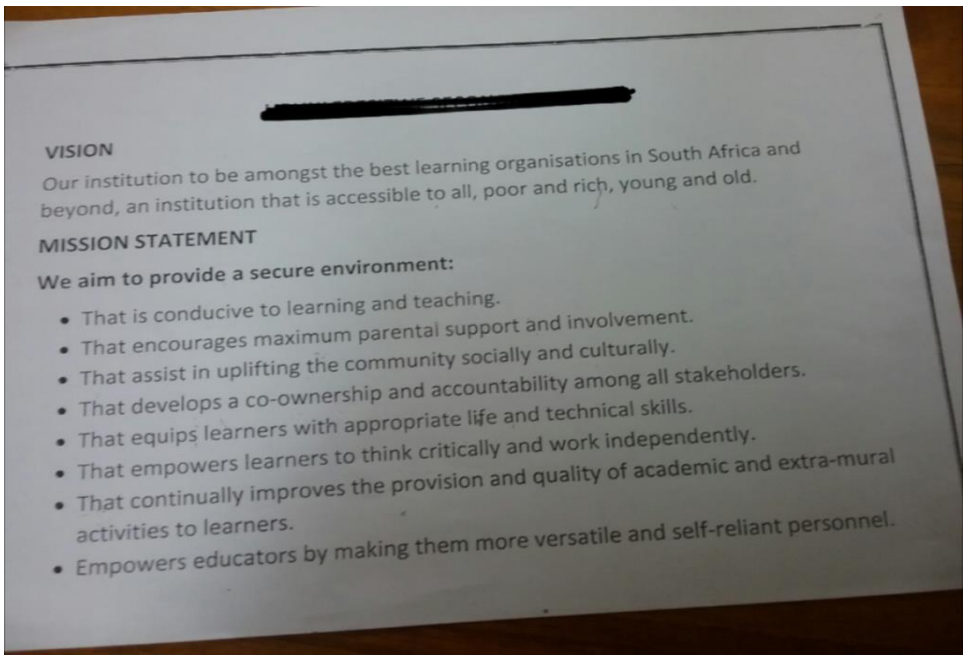


**Figure 2: Extract from Sizwe Secondary School Policy Resources File**

The uniqueness of each school enables school leadership to develop a school vision and mission in consultation with other key stakeholders, especially those that are performing critical functions such as teaching and learning (Gurley, Peters, Collins & Fifolt, 2015). On the basis of a plethora of reasons about why each particular school exists, with the underlying consideration of the contexts, school leaders will ensure that well-crafted and supported vision and mission statements are developed to effect powerful transformation in the school on many different levels (Kose, 2011). Although schools may be affected by similar contextual factors, the vision and mission

statements of schools differ in terms of understanding why the school exists, the goals statements (DuFour & Eaker, 1998), the shared values statement (Blanchard & O'Connor, 1997), as well as the priorities which the school decides to focus on (Gurley et al., 2015). The vision and mission of each school indeed inform all the activities that take place in schools.

### 5.2.3 Theme 3: Challenges hindering the creation of learning spaces

The challenges that seem to hinder the creation of learning spaces for the 21st century learning for learners emanated, in the main, from rural contextual factors in South Africa. In presenting this main theme, six sub-themes that explain the main one, are presented below. The six sub-themes are scarce educational resources; no-change attitude by the teachers; lack of parental involvement; financial constraints; burglaries, vandalism and theft, as well as electricity supply.

#### 5.2.3.1 Sub-theme 1: Scarce educational resources

Scarce educational resources are one of the challenges that hindered the creation of learning spaces for the 21st century learning for the learners. Generally, subjects at secondary school levels require relevant resources for specialised subjects. In attesting to this common challenge of scarcity of resources, only three out of thirteen participants expressed their concerns that are related to scarcity of relevant resources. The scarce educational resources that were mentioned by the participants included gadgets such as computers or laptops, tablets and data projectors which, in their view, are critical in creating learning spaces. In this regard, Mr Pikoli was concerned about the school having limited number of digital projectors, laptops and tablets. According to him, these resources are insufficient even for an average class size of forty learners. He expressed himself as follows:

> *I am bringing to your attention that the school has scarce educational resources because we have limited number of digital projectors, laptops and tablets. For example, there are ten tablets and these are insufficient an average class size of more than forty learners* **(Mr Pikoli, a teacher at Themba Secondary School).**

Miss Dlamini revealed that the scarcity of laptops resulted in a decision to reduce the number of learners that are doing Computer Application Technology as a subject to the number of available laptops. She had the following information to share:

> *Our school has a subject known as Computer Application Technology (CAT) that needs computers, but there are only ten computers are available. We are therefore, compelled to*

*limit the number of learners doing this subject to ten because of the scarcity resources that include projectors* **(Miss Dlamini, a teacher at Sizwe Secondary School).**

The common concern among many seemed to be the scarcity of technology-based instruments. Mr Ndomela referred to the source of most challenges which he referred to as scarce technology-based resources that hindered the 21st century teaching and learning approach. The alternative method was to revert to the traditional teacher-centric teaching and learning approach. He lamented as follows:

*Actually, I may understand the 21st century teaching and learning, but the current situation here where I am, forces us to be always physically present in a classroom and revert to traditional teacher-centric approach. The reasons for this are that there is scarcity of technology instruments that are related to the 21st century teaching and learning* **(Mr Ndomela, a teacher at Themba Secondary School).**

Scarce educational resources in general are the main obstacles for every school to function properly in any given context. However, in the rural context, any quick-fix solution is extremely strenuous compared to urban areas. Moreover, learning spaces that must be created to support the 21st century learning may not be realised in the light of scarce resources in rural settings.

#### 5.2.3.2 Sub-theme 2: The 'No-change' attitude by the teachers

The teachers' no-change attitude seemed to be one of the challenges that hindered the creation of learning spaces for the 21st century learning for learners. Indeed, they nullify initiatives and innovations to transform outdated traditional practices, and thus, hinder the creation of learning spaces that support the 21st century learning for learners. In the absence of statutory policies in South Africa, encompassing the guidelines and legally binding framework for creating learning spaces for the 21st century learning, different attitudes from teachers play out from participants' voices. It is important at this stage to understand the initial undertakings that may have prompted the transformation agenda in both secondary schools. This may presumably be an underlying factor for teachers' attitudes that hinder the creation of learning spaces for the 21st century learning.

Miss Hlela, the Principal of Sizwe Secondary School shared important information for this study that the former and late principal played a critical role in ensuring that the outdated traditional teaching and learning was abandoned and new 21st century approaches were adopted. He had taken the responsibilities for encouraging and motivating teacher to integrate technology in teaching and

learning. According to Miss Hlela, her former and late principal requested and motivated the Department of Education to organise advocacy teaching for the fourth industrial revolution (4IR) era. School leadership took over from where the former principal left off. Miss Hlela echoed the following in that regard:

> *My former and late principal was actively involved by ensuring that the school is transformed from the old ways of teaching and learning was taking place to the contemporary approaches. He kept encouraging us to attend two days' meetings that were organised by the Department of Education; it was him who had taken that initiative. The former principal felt that we needed to expose our learners to the Fourth Industrial Revolution (4IR). Since then, we are trying and in our staff meetings, our school leadership motivates and encourages all teachers to make use of technology when teaching. I would say that my former principal assisted the school a lot to be where it is today* **(Hlela, the Principal of Sizwe Secondary School)**.

Notwithstanding the realisation of what the former and late principal of Sizwe Secondary School had done to transform the school, it is of utmost importance to reveal how this idea emerged and prompted him. It appears that the changes that took place at Sizwe Secondary School started with the influence from their former Grade 12 learners who had experienced challenges at tertiary institutions. They suggested to the former and late principal to introduce a subject that will provide learners with computer skills to prepare those who will be pursuing their career choices at institutions of higher learning. Miss Hlela, the Principal of Sizwe Secondary School elaborating on this point, had this to share:

> *At first, it started with our former learners from tertiary institutions. They approached us that they are struggling when they are expected to have some kind of knowledge about using computers. So, we felt the need to expose our learners to computer skills. We then started to have a computer allocation technology (CAT) subject. We also decided to transform our school so that our learners get equipped and are enabled to get the kind of knowledge that will make them fit in tertiary institutions* **(Hlela, the Principal of Sizwe Secondary School).**

In the case of Themba Secondary School, there is an indication that the initiative was from the retired principal who decided to offer her learners computer skills. It was after she realised that parents of learners had to pay large amounts of money for their children to acquire basic computer skills as a pre-requisite for entry into tertiary institutions. Computer lessons were offered in the nearby city, forty-five kilometres away from the area. Mr Makhoba, the Principal of Themba Secondary School shared his knowledge, saying:

*My former and now retired principal who is a local resident in this rural area had a drive to introduce a subject that will provide our learners with basic computer skills since our learners come from poor families. She knew that most learners come from child-headed families and others get support from their grandparents' social grants. Clearly, they cannot afford financial support for learners to acquire computer skills in town that is too far from this area and computer courses are too expensive. The Computer Application Technology then started in 2001, after three private companies sponsored the school with twenty computers. It all developed from that time until the school used computers and other gadgets in teaching and learning* **(Mr Makhoba, the Principal of Themba Secondary School).**

There is an indication that the initial intention from former principals was to provide learners from rural areas with computer skills, thus, enabling them to compete fairly at tertiary institutions with other learners from affluent areas and townships. Nevertheless, the historical perspectives of both schools regarding computers landing in schools was initially not about integrating technology into teaching and learning but there were developments that led to this realisation. It is therefore, a worthwhile exercise and is critical for this study to understand that there were some teachers' attitudes that seemed to hinder the creation of learning spaces for the 21st century learning for learners. Notwithstanding the good intentions of introducing computers in both schools to provide rural learners with computer skills, there is an indication that some participants are adamant and do not infuse technology in teaching learners. In this regard, four out of eight participants provided evidence of negative attitudes towards creating learning spaces for the 21st century learning. Evidently, Miss Hlela was concerned about some teachers who were still reluctant to make a shift from outdated traditional teaching practices and fuse technology in teaching and learning. She said:

*Some of the challenges are posed by few teachers who refuse to change and adapt to new realities; they are still saying that they are too old and they were born before technology* **(Miss Hlela, the Principal of Sizwe Secondary School).**

Miss Zikode's negative attitude towards transforming her traditional teacher-centric pedagogies to adopt relevant 21st century practices are evident; she was not prepared to do change and adapt to the new realities of the 21st century. She persisted in using old age approaches, citing the lack of technology as the reason for not infusing technology in teaching and learning. She claimed that she was not prepared to infuse technology in her teaching because of her not being convinced of how technology can improve learner performance and results. She argued:

*As I am of an older generation, I do not have much knowledge of technology and I am still not convinced about how technology can improve learner performance and the results* **(Zikode, a teacher at Sizwe Secondary School).**

Mr Makhoba affirmed the presence of older teachers with long experiences of traditional teacher-centric teaching practices in schools that are adamant and refuse to change their outdated traditional teaching practices. He viewed this situation as a major challenge because they believe in the teaching practices that they are accustomed to. Moreover, he was concerned about the Department of Education's failure to provide training to the teachers on the new approaches to the current education landscape for the 21st century. Mr Makhoba shared his sentiments:

*The Department of Education does not train teachers to change their attitudes to embrace practices for the new education landscape of the 21st century learning. The challenges that continue unabated, are that schools have old teachers who still believe in an outdated culture of teaching and learning. Meanwhile, almost all young teachers believe in fusing technology in teaching their subjects* **(Mr Makhoba, the Principal of Themba Secondary School).**

Similarly, Miss Dlamini still maintained her teacher-centric teaching and learning practices. Because she is young and expectedly technologically literate, a general understanding was that she could easily adapt to new ways of teaching and learning for the 21st century learning. However, this was not necessarily the case since she continued to organise a learning space where learners were made to see the teacher as the main source of knowledge. She would ensure that learners sat in standardised rows facing the teachers while she imparted subject content knowledge to them. She believed in the initial training to be a professional teacher as she said the following:

*I do not organise learners into groups. They sit in rows facing the front of the classroom. This is the way that I was trained to be a teacher and it works for me* **(Miss Dlamini, a teacher at Sizwe Secondary School).**

The above excerpt suggests that the age and the lack of professional development tended to hinder the creation of learning spaces for the 21st century learning for learners. In general, the resistance to change is one deterrent factor for some teachers to not take initiatives and innovations that are consistent with the new approaches to teaching practices. Therefore, the creation of learning spaces was hindered, and this had a negative impact on the learners developing the 21st century skills objectives.

#### 5.2.3.3 Sub-theme 3: Lack of parental involvement

The lack of parental involvement in schooling affairs was identified as a challenge that stifled the creation of learning spaces for the 21st century learning. The voices of the three out of thirteen participants speak aloud when they viewed parents as isolating themselves from the same schools that served their children that would ultimately, change their lives for the better. The evidence to this challenge and others is what Mr Ndomela lamented about. He said that the non-involvement of parents in the school affairs was a problem. However, only a few parents came to school when there was a reported problem against a teacher or if there was a celebration for learners who had passed with distinctions. Mr Ndomela said:

> *There is a problem of non-involvement of parents in the affairs of the school. Very few are involved and their involvement is realised when their learners have passed with distinctions. Parents in this rural area used to come to school only when a learner had reported a teacher for wrong doing* **(Mr Ndomela, a teacher at Themba Secondary School).**

Meanwhile, Mr Zulu viewed parental involvement in the affairs of the school as minimal. The evidence of the enormity of this problem can be seen in the fact that parents did not even check the exercise books of their children. When they were invited to the schools, they sent their neighbours to represent them. If it happened that they manage to come to school, it normally happened after many days from the time they were invited. He said:

> *Parental involvement is minimal if there is any. My concern is that parents do not even check the exercise books of their children. At times you send a learner home for whatever reason such as to invite their parents to come to school, a neighbour is sent instead, to attend to the matter. In other instances, it happens that it is either no one comes to school to attend to the matter that warrants the parental visit to school or it takes too long for the parents to come* **(Mr Zulu, a teacher at Themba Secondary School).**

School leadership from both schools expressed a dire need of the support from parents and the community at large. Mr Sokhela expressed a view that the physical assets of the school would have been the responsibility of parents and the community to protect after school hours, during holidays and on weekends. Furthermore, it is unfair that schools and teachers work in isolation from parents and to protect the resources of schools from the same community from which learners are coming. Mr Sokhela had the following to say:

> *I find that we have more challenges in our school as teachers are working on their own without the involvement of both parents and the community...you will find that schools have to protect the equipment from the same community from which the learners come. It is unfair that schools and teachers work in isolation from the parents and the community*

*as they distance themselves from the affairs of schools. During school holidays, weekends and after school hours, it is where burglary, vandalism and theft used to take place. It is the responsibility of parents and the community to come to the party and protect all the assets of the school* **(Mr Sokhela, a teacher at Sizwe Secondary School).**

The three participants' voices above indicate that the lack of parental involvement in the education of their children is one of the challenges among many particularly in rural secondary.

#### 5.2.3.4 Sub-theme 4: The financial support from parents

Financial support from the parents emerged as one of many challenges in creating learning spaces for the 21st century learning for learners. For example, the use of WhatsApp media platforms requires learners to be in possession of smartphone devices. These devices are not affordable to parents who belong to the low-income group. It is difficult for some rural families to access the required data for connectivity purposes. Financial support from parents would enable teachers to interact and engage with learners to continue with learning beyond school hours and find information on their own. The use of smart phones and data purchase are vitally important in this regard. Four out of thirteen participants revealed that financial constraints that rural parents experienced had a negative impact on teachers' endeavours for learning to take place everywhere anytime from both schools. Mr Zungu acknowledged that not all learners had smartphones and those that did had a challenge of high data costs. He alluded to the fact that this situation made it extremely difficult for him and teachers in general to ensure that all learners received the same quality teaching in and beyond the classroom setting. Mr Zungu had the following to say:

*First of all, not all learners have smartphones phones. Secondly, the cost of data is too high for any person especially, in rural areas who does not have a stable income to afford. It makes it extremely difficult for us as teachers to ensure that all learners receive the same quality teaching in and beyond the classroom environments* **(Mr Zungu, a teacher at Sizwe Secondary School).**

The unaffordability of data by parents of learners with smart phones was also echoed by Mr Sokhela, alluding to the reality that high data costs was attributed to most learners that seemed to be unable to participate in out-of-school interactions. This is how he shared his concerns:

*The only problem that may hinder interacting with learners can be attributed to the unavailability of data, and this contributes to learners being left out. However, most learners seem to participate in out-of-school engagements* **(Mr Sokhela, a teacher at Sizwe Secondary School).**

On the same issue of a challenge that is related to smart phones, Miss Dlamini reiterated what Mr Zungu had alluded to when the issue was raised. Some of the learners had limited access to smartphones. They had access to these phones because their parents had them or sometimes, because their relatives had them. Such relatives may not be staying with them, and thus, access was very limited, and that negatively affected communication with the teachers. This is what Miss Dlamini, a teacher at Sizwe Secondary, had this to say in this regard:

> *...in this area we have challenges that most learners even in Grade 12, do not have smart phones, let alone accessing the laptop or Ipad... If the smart phone can be accessed by the learner, you will find that it belongs to her/his uncle or a relative. When the learner needs it, the uncle or a relative has not returned from work or is using the smart phone resulting on the learner ending up being unable to access information at the time the learner needed it.*

Mr Pikoli shared similar sentiments that as those raised by Miss Dlamini. Mr Pikoli had the following to say:

> *There are learners that do not have smart phones but they are in my group because they use their parents' ones so that they receive whatever information or school work that I send to them, particularly, during the time of the national lockdown. My learners find it difficult to access information that I had posted on the WhatsApp group. Understandably, they either submit their work very late or are unable to do so before I post solutions to the group.*

The above four participants' voices indicate that financial constraints have a negative impact on their endeavours to assist learners to continue learning in the out-of-school learning spaces. Although teachers have no control on how learners organise learning space, the responses that the teachers get seem to indicate that learners are able to create informal learning spaces that are conducive to the out-of-school learning to occur. However, it appears that it is a small percentage of learners who have smartphones, the rest do not enjoy these opportunities to learn in spaces other than the formal settings such as school environments.

#### 5.2.3.5 Sub-theme 5: Burglaries, vandalism and theft

Burglaries, vandalism and stolen school property posed a challenge that reversed the gains that rural secondary school had worked very hard to make. Five out of thirteen participants had raised their concerns that the incidents of this nature exacerbated the burden of teachers to navigate the challenges of scarce educational resources amongst many. Mr Zulu lamented about the negative

impact that burglaries, vandalism and theft have in terms of reversing progress that had already been made by the school leaders. He revealed that computer application technology (CAT) subject was introduced into the school curriculum, the stage at computer skills were provided to learners for the first time at Themba Secondary School. This was followed by developments where computers were used for teaching and learning specifically, for engineering and graphic design (EGD) subject that was introduced later with other groups of technical subjects. Mr Zulu revealed what the school went through, experiencing a series of burglaries, vandalism and theft. Mr Zulu shared the following important and valuable information:

> *In 2010, there was an introduction of Computer Application Technology (CAT) with a standard size classroom that was converted to be for CAT teaching and was filled with computers that were bought from finances sponsored by three private companies. Subsequently, the school was developed until a second set of computers were used by learners doing Engineering and Graphic Design (EGD) subject. Fast forwarding from 2011, until last year (2020), the school had Wi-Fi facility sponsored by a private company. However, I can safely say that we do not have a single computer from those two classrooms. We are now at the stage where teachers use their personal gadgets to continue to facilitate the 21st century learning* **(Mr Zulu, a teacher at Themba Secondary School).**

Mr Makhoba, the Principal of Themba Secondary School, was also deeply concerned about the communities that targeted schools for burglaries. Since the school also offered technical subjects to the mainstream curriculum, burglars targeted the equipment for these technical subjects and technology gadgets. He expressed his concern as follows:

> *My concern is with the communities that target schools using technology instruments. I have noticed that there are no secondary schools with technology gadgets that have not been the victim of burglaries. The communities see and seize the opportunities of benefitting from the equipment of the school in a wrong way. The school also had security cameras but because of load-shedding, scarce resources and burglary contributed to the cameras being stolen* **(Mr Makhoba, the Principal of Themba Secondary School).**

The laments expressed by Mr Makhoba above, were also shared by Mr Pikoli, a teacher at Themba Secondary School in terms of the resources that had been lost through theft and vandalism. He went to the extent of revealing the pressure that the school and teachers worked under. The pressure related to retaining their reputation as a school that had transformed to a 21st century secondary school that was no longer using traditional approaches to teaching and learning. Losing physical resources undermined this vision and status. They felt that they were not prepared to go back to the old ways of teaching, and that exerted tremendous pressure on them. He said:

*This school has been under severe attack of burglaries, vandalism and theft of valuable resources. So, quite a lot of valuable resources have been stolen although we are always known to be a comparatively well-resourced school to other rural secondary schools. The pressure now is upon us to continue infusing technology in teaching and learning, the new approach for the 21st century learning practices. Yet, the condition of the school buildings were not designed to accommodate technological resources and a variety of technical machineries. It is unfortunate that these incidents deprive us as teachers and learners the opportunities to acquaint ourselves with the new approaches in spite of the adversities that are associated with rural communities and rural life* (**Mr Pikoli, a teacher at Themba Secondary School).**

Mr Ndomela also expanded on the concerns as raised by Mr Makhoba and Mr Pikoli regarding frequent burglaries that targeted technological devices. He revealed that the school gadgets that were stolen due to frequent burglaries included laptops, data projectors, calculators and machinery in the technical section of the curriculum. Furthermore, vandalism of the infrastructure was not limited to classrooms but Wi-Fi facility and security cameras were not spared. This is what he said:

*There were gadgets in our school such as laptops and data projectors for use by teachers and learners, but we are experiencing a problem of frequent burglary once new equipment has been purchased...we had also calculators that were sponsored by XX Company for mathematics, engineering and technology (MET) programme that I manage in this school. Unfortunately, these calculators are all gone and noticeably, burglars target calculators, computers and even the machinery in the technical section of this school; hence, one engine was stolen... the infrastructure such as the classrooms, Wi-Fi facility and installed security cameras were vandalised* **(Mr Ndomela, a teacher at Themba Secondary School).**

Mr Zulu shared his concerns about the frequency of break-ins and theft of computers in the school and Wi-Fi facility. He even recalled all the incidents that took place and referred to burglaries as a pandemic. He explained:

*We had two classrooms full of computer, where one was for a Computer Application Technology and the other one was for Engineering Drawing and Design and projectors. I can safely say that we do not have a single computer. Last year (2020), we had a Wi-Fi sponsor and all were gone during school closure in January of this year (2021) burglary is a pandemic in our school* **(Mr Zulu, a teacher at Themba Secondary School).**

Meanwhile, the Principal of Sizwe Secondary School shared her similar challenges to that of Themba Secondary School, namely, burglaries, vandalism and theft. She expressed her deep concerns about stolen valuable assets such as digital projectors, a substantial number of tablets and laptops. According to Miss Hlela, two data projectors, one digital projector, 65 tablets and undisclosed number of laptops were all stolen on different occasions through burglaries. She shared her concerns as follows:

> *Our problem is with security related issues as we had projectors but we lost some, and are now left with a few. We still do not know how we lost these assets because there was no sign of burglary in the first incident. We also had sixty-five tablets of which, twenty-five were stolen the other year (2019) and all the laptops from the computer centre last year's (2020) burglaries were taken away. I believe without these problems we would have gone too far with teaching and learning of the 21st century* **(Miss Hlela, the Principal of Sizwe Secondary School).**

Similar sentiments to those echoed by Miss Hlela, ware reiterated by Miss Dlamini. She candidly explained the frequencies of burglaries and theft of valuable equipment. She said:

> *Burglaries take place in our school almost three times a year and if there are new gadgets that have been delivered, few days later they are gone including laptops that were in a laboratory. These incidents took place in different occasions as they broke into a smart classroom in one day and in the other, they took all the laptops. The next day, they broke into the administration block and removed computers and laptops that were kept inside.... the Department of Education had given our school the computer which had every lesson for all subjects in the form of content or video, but it is no longer here* **(Miss Dlamini, a teacher at Sizwe Secondary School).**

The above information is an indication of the depth of the problem of schools losing valuable equipment. Since this is the case in rural secondary schools, the creation of learning spaces may not be actualised because technologically based resources and infrastructure are the backbone for the 21st century learning.

#### 5.2.3.6 Sub-theme 6: Unreliable supply of electricity

Unreliable electricity supply was identified as a challenge that hindered the creation of learning spaces for the 21st century learning. Technologically based devices and instruments need continuing supply of electricity. The frequencies and prolonged power outages hinder the continuing infusion of technology in teaching and learning. The continuing interruptions that

emanate from electricity outages, resulting in teachers' reverting to traditional teacher-centric pedagogies. In most cases, lessons are planned prior to face-to-face interactions with learners in the classroom. Unfortunately, when the lesson is about to start or when it is in progress, electric power cuts kick in. Therefore, there is only one option to continue with the lesson, which is that of teacher-centric teaching and learning practices. In this regard, Miss Hlela, the Principal from Sizwe Secondary School had the following to say:

> *One of the challenges that I sometimes face, is the challenge of electricity. You find for instance, that, whilst a lesson has been planned and you have gone to class, there is no power, and now you have to change the plan and use the old way of teaching where I have to stand and deliver the lesson instead of involving them in the lesson* **(Miss Hlela, the Principal of Sizwe Secondary School).**

Similarly, Miss Zikode also shared her concerns related to the challenges of unreliable supply of electricity. She said:

> *Most challenges are electricity supply related, where it just trips-off at any time of the day; may be for a day or two. I end up having to come out with a second plan of presenting my lesson* **(Miss Zikode, the Deputy-Principal at Sizwe Secondary School).**

The issue of unreliable supply of electricity was also of great concern at Themba Secondary School. Mr Pikoli was also concerned about electricity that just tripped of unexpectedly. Obviously, technology gadgets that work with electric power supply can no longer be used. He had the following to say:

> *... we also have a challenge of electricity that is not reliable that cause us to be unable to use these particular gadgets* **(Mr Pikoli, a teacher at Themba Secondary School).**

Mr Ndomela also complained about unreliable and prolonged electricity supply and he said the following:

> *There are gadgets in our school such as laptops and the data projector to use, but we are experiencing problems of frequent and prolong power outages of electricity* **(Mr Ndomela, a teacher at Themba Secondary School).**

The four participants identified electricity supply as the most deterring factor that was an obstacle that hindered the creation of learning spaces for the 21st century learning in their schools. Therefore, for 21st century learning to be a reality, technological resources require continuing and reliable supply of electricity.

### 5.2.4 Theme 4: School leaderships' intervention measures

In considering the challenges that participants have brought to the fore, school leadership is obliged to intervene to either address or mitigate the challenges that are internal to their schools. Notwithstanding the fact that both schools are impacted by the same context of rurality in their daily activities, the intervention measures may not necessarily be the same. Hence, each school is unique and so are the expected intervention measures. This theme and subsequent the sub-themes emerged when the participants were responding to a question of how school leadership mitigate challenges that participants encountered when they create learning spaces for the 21st century learning for learners. Four subthemes emerged from the analysis of the face-to-face interviews with the participants from both rural secondary schools. The sub-themes are; change attitude; strategies to strengthen security; replacement of stolen property; staff developmental workshops.

#### 5.2.4.1 Sub-theme 1: Change attitude

Attitudes, either positive or negative displayed by people play an important role in identifying different standpoints, especially about transformation that must take place. It has transpired from interviews that the creation of learning spaces that involves a transformation from traditional teacher-centric to learner-centric pedagogical practices is fraught difficulties and complexities, and negative attitudes of teachers contribute immensely to these. Five participants indicated that positive attitudes are critical in terms of integrating technology in teaching and learning in their respective schools. Miss Hlela reflected on developments, as she was a DP in the initial stages of transformation. Initially, there was reluctance from teachers to integrate technology in teaching and learning, which meant changing the ways to which they were accustomed. In light of continuing influence from school leadership by encouraging teachers to embrace the much-needed transformation, the majority of the teachers ultimately changed their attitudes. She reflected on the past developments and said the following:

> *At first, there was a reluctance to integrate technology in our teaching practices, and that meant that we had to change the way we used to teach. The majority of teachers finally felt that this was the best way to go. What encouraged us to embrace this change was that learners get the information speedily* **(Miss Hlela, the Principal of Sizwe Secondary School).**

The sense of positive attitude was realised when there were suggestions to improve our teaching and learning such that it was aligned with the expectations of the 21st century learning. Miss Zakwe's positive attitude was noted when she proposed that cell phones had to be officially used in the schools. She substantiated her suggestion by stating the advantages such as sending notes,

communicating with learners that enable them to access information everywhere anytime. Importantly, many other resources are saved such as duplicating papers and time. Miss Zakwe shared the following and said:

> *I think that it is important to allow cell phones in our school because they help teachers in many ways such as sending notes. We can also communicate with learners and by doing so, we can save many other resources such as duplicating papers and time. Learners could also be enabled to access information everywhere anytime* (**Miss Zakwe, a teacher at Sizwe Secondary School).**

One of the participants was already intrinsically motivated and inspired by his previous exposure to advanced technology experiences and benefits from their utilisations. Mr Zungu was inspired to use technology in teaching and learning from the time he was a learner in a township school. There were teachers who were already using technology in teaching their subjects, which obviously was his source of inspiration. He said:

> *I was fascinated and wanted to learn more about new ways of how teaching and learning was done in a township high school where I was doing my studies. Fortunately, the school was using gadgets, which inspired me to also use as I am now teaching. I also learned more when I was at the university as I was also motivated by how they use technology in teaching and learning* **(Mr Zungu, a teacher at Sizwe Secondary School).**

Mr Zulu shared another sentiment when he commented about integrating technology in teaching and learning that it made it much easier for learners to take charge of their own learning. He further alluded to the role of the teacher that it would be to guide learners along towards expanding their thinking capacity. Mr Zulu then said:

> *In using new approaches to teaching and learning, by integrating technology makes it easier for learners to take charge of their own learning. All what the teacher has to do is to guide them through towards the concepts... in this case, learners are part of the learning process within the classroom that enabled them to expand and stretch their thinking capacity* **(Mr Zulu, a teacher at Themba Secondary School).**

It is important that school leadership taps on the expertise of teachers that are technology savvy to influence others to develop a change attitude who seem to be adamant to transform their outdated didactical to the 21st century pedagogical practices. It is also noteworthy to acknowledge the contributions of teachers that are acquainted with using technology to develop positive attitudes to those that believe in the old ways, and are still using traditional practices to teach, and are not yet transforming. In this regard, Mr Zungu was using his expertise of using technology to convince others by showing them how they can use technology in teaching and learning. He said:

*Since I teach computer application technology (CAT), I have more opportunities to use and show my colleagues how we can use technology in teaching and learning. In this school, I am the only teacher who assists others who encounter challenges that are technology-based. To me this is an approach that I use to encourage teachers to transform traditional teaching and learning to new approaches of using technology in teaching* **(Mr Zungu, a teacher at Sizwe Secondary School).**

The voices of these five participants indicate that teachers have different reasons for infusing technology in teaching which, to a certain extent, is what is required for the 21st century learning. It is important to take into cognisance that five participants had positive attitudes towards change, and that motivated them to integrate technology in teaching and learning. However, they have never been formally trained on how to infuse technology in teaching and learning. Apparently, individuals infused technology in teaching, presumably on the basis of their ability to use technological gadgets such as laptops, tablets and projectors to mention a few. By infusing technology in their teaching, learner-centric pedagogical practices of the 21st century learning began to develop. Implied in this kind of teaching approach is the subtle creation of learning spaces for the 21st century learning for learners. What has come out strongly in this section is the importance of attitude change for the success of the process of creating learning spaces conducive for the 21st century learning.

### 5.2.4.2 Strengthening security

The strategies that are employed to strengthen security in both schools are the measures that may either address or at least, mitigate the negative effects of the challenges of burglaries, vandalism and theft that the two schools faced. The voices of both principals are critical at this stage because they are the ex-officio members of the School Governing Bodies (SGBs). In this regard, Mr Makhoba initiated a campaign of bringing closer to the school the services of the South African Police Services (SAPS), leaders from different political parties and traditional leaders that are present in the area. The intention was to build good relationships between these local structures that would assist in influencing local communities to protect their school. Mr Makhoba shared the following information when he said:

> *There are campaigns that have been done such as parents' meetings, the involvement of the South African Police Services (SAPS), leaders from different political parties and traditional leaders that are in the area in order to build good relationships for school safety purposes. These structures are involved so that they can assist in influencing the community to treat the school as their asset that must be protected by any community member. In a sense, this is one of the strategies to beef-up security of the school property. Another thing is that as of now, there will be an installation of security cameras in this school* **(Mr Makhoba, the Principal of Themba Secondary School).**

On the other hand, Miss Hlela, the Principal of Sizwe Secondary Schools revealed that the agreement was reached with the SGB for the installation of floodlights, cameras and the increase in the number of security personnel to two instead of one. The intention for having two security personnel for the night shifts was for them to support each other if there were suspicious break-ins at night. Each of these security personnel will be carrying a torch and a whistle. The whistle would be blown in order to send an alert to the other security personnel for support. She had the following to say:

> *There are agreements that were reached in order to ensure that the security of the school is strengthened. One of the strategies is the installation of floodlights, cameras and there will be two security personnel for nightshifts. Both security personnel will both be carrying a torch and whistles that will be blown to send one another an alert if there are suspicious activities that are taking place within school premises at night* **(Miss Hlela, the Principal of Sizwe Secondary School).**

The involvement of key stakeholders in strengthening the security in schools in safeguarding the school property of both schools is important. Measures to enhance security seemed to be well

planned but their swift and full implementation was more important when looking at the nature of burglaries that have taken place and the valuable equipment kept in the school premises. The evidence from reviewing documents in the form of minutes of both School Governing Body (SGB) and parents' meetings at Sizwe Secondary School shows recorded agreement regarding the suggested measures of how to stop burglaries, vandalism and the stealing of school property. The dates of these minutes indicated that they are not more than a month old since meetings were conducted and the time data was generated. Some of the measures to mitigate this scourge of criminal activities had yet to be implemented and some were still in the process of being finalised.

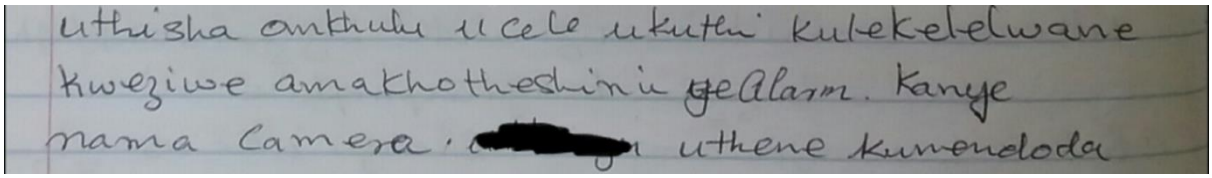


**Figure 3: Extract from the minute-book of Sizwe Secondary School**

Translation of the extract: The principal requested that there must be a support in doing quotations for alarm system and security cameras. This extract is evident of to the intention of the school as one of the measures to strengthen security.

Furthermore, whistles were bought to be used by both security personnel. The condition for using these whistles, for example, is at the time when one security personnel is held hostage by burglars.

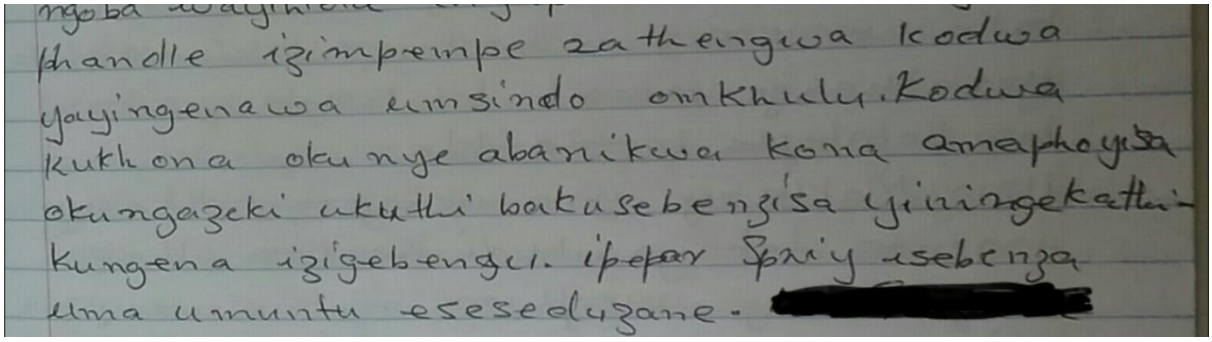


**Figure 4: Extract from the minute-book of Sizwe Secondary School**

Translation: Whistles were bought but seemingly, they seemed to a lack of louder sound effect. They specifically were to be blown in order alert other personnel if there is burglary and theft that will be taking place.

### 5.2.4.3 Sub-theme 3: Replacement of stolen property

Physical resources are important in supporting effective teaching and learn especially in the 21st century teaching. Therefore, replacing the lost resources is crucial. In the case of replacing the stolen school property at Sizwe Secondary School, Miss Hlela and the SGB planned to use financial school allocation to replace some of the laptops by limiting a certain number they will be buying on yearly bases until the sufficient number that is required is reached. She had the following to share:

> *The decision that the principal and the SGB had reached is that from the recent school allocation, they top up laptops by twenty this year and subsequent years until the sufficient projected number of laptops is reached* **(Miss Hlela, the Principal of Sizwe Secondary School).**

Mr Makhoba, the Principal of Themba Secondary School was of the view that sponsors should be sought so that equipment for technical section of the school can be replaced. Budget allocations from the Department of Basic Education are inadequate to ensure replacement of stolen property. Therefore, he intended to approach the school finance committee to seek finding of replacing stolen computers, projectors and the installation of Wi-Fi facility in addition seeking sponsorships. He had the following to say:

> *We have decided as a school to look for sponsors especially in technical section because the consumables are too expensive to be allocated from norms financial allocation from the government. The school finance committee will review the budget and allocate funds for replacing the much-needed computers and the installation of Wi-Fi facility* **(Mr Makhoba, the Principal of Themba Secondary School).**

Both schools had good intentions to replace the stolen equipment. However, the amount of money needed posed a challenge since most equipment was sponsored by the private sector. Therefore, extra-ordinary measures were needed to be employed to get sufficient financial support.

### 5.2.4.4 Sub-theme 4: Teachers' developmental workshops

Staff development at school level is an important factor to mitigate some of the challenges that hinder the creation of learning spaces for the 21st century learning for learners. It is noteworthy to understand that the creation of learning spaces has always been an individual initiative and effort through the integration of technology in teaching and learning. Obviously, without statutory obligation or perhaps, policy directives from the Department of Basic Education in South Africa

to transform outdated teacher-centric teaching and learning, the onus is on school leadership to take initiatives in this regard when they receive requests from the teachers. Generally, the expectation is that school manages, as they are in senior positions, provide teachers not only with resources that they had requisitioned, but also provide support and professional development. Teacher participants were asked about what their immediate supervisors did in ensuring that the creation of learning spaces for the 21st century learning was realised. It emerged from the participants' responses that school managers in formal school leadership positions did not organise any teacher developmental training in the two schools. In that regard, Miss Shinga suggested that school managers needed to invite experts from outside for teacher developments. She stated the reason for her suggestion that school managers were in the dark themselves regarding to changing didactical approaches to new teaching and learning approach for the 21st century. This is how she expressed herself when she said:

> *School leadership needs to invite experts from outside for teacher development in many respects so that all of us can be able to change our old didactics into new ways of teaching and learning for the 21st century. Our leaders seem to be in the dark with new ways of teaching because if it is not so, they would organise workshops to show us better ways of teaching* **(Miss Shinga, a teacher at Sizwe Secondary School).**

Mr Zungu had received some advice regarding the need to transform traditional ways of teaching from the workshops that were organised by the Department of Basic Education. He suggested the necessity for all teachers to be exposed to these workshops so that they understand innovative alternative ways of transforming traditional teaching and learning. This is what Mr Zungu had to say:

> *We were encouraged to transform traditional ways of teaching and learning from the workshops that I normally attend. In this school, I am the only teacher who assists others who encounter challenges that are technology-based in order to encourage them to transform traditional teaching and learning approaches to new ways by using technology* **(Mr Zungu, a teacher at Sizwe Secondary School).**

On the question about what school leadership actually does for the actualisation of the 21st century learning, Mr Makhoba, the Principal of Themba Secondary school argued that it is the responsibility of Subject Advisors to develop teacher to use new ways of teaching for the 21st century. He added that he was planning to invite Subject Advisors for the same purpose. He said:

> *... now for workshops, I will invite Subject Advisors and the Department of Education to be responsible for staff developments on the new ways of teaching by using technology* **(Mr Makhoba, the Principal of Themba Secondary School).**

Meanwhile, Miss Hlela, the Principal of Sizwe Secondary School shared her sentiments about the workshops that were conducted by the Department of Basic Education. In her view, from these workshops the support that teachers were getting was only for presenters to encourage them to integrate technology in their teaching practices. She said:

> *I can say that the Department of Education is organising workshops but, in these workshops, they usually encourage us to make use of technology. The workshops that are organised by the DoE are for empowering teachers to improve their subject content knowledge and compliance* **(Miss Hlela, the Principal of Sizwe Secondary School).**

The above participants' voices are an indication that the staff developmental workshops from the level of the Department of Basic Education did not in any way serve the needed purpose of empowering teachers for the 21st century learning pedagogical practices. However, Subject Advisors played a critical role in empowering teachers to maximise their subject content knowledge on which they are specialising. Hence, subject content knowledge is one of the enablers for the new teaching approaches for the 21st learning to be a success.

### 5.3 Conclusion

In this chapter, qualitative data was presented which explained what school leadership did in creating learning spaces that best support the 21st century pedagogical practices. The approaches are informed by displayed behavioural practices underpinned by their understanding of learning spaces and the context in which schools are located. The data presentation was structured according to the emerging themes from research questions that are displayed on Table D. The table gives a good indication of good practices of the participants, the challenges that school leadership encountered and the manifestations of the mitigating strategies. School leadership took the responsibility of involving stakeholders in order to achieve the desired outcomes. An overview of the desired outcomes is reflected in innovations that involved infusing technology in teaching and learning. These best practices formed the basis of discussing the findings in the next chapter, that is, Chapter Six on the types of learning spaces that school leadership created. In the discussion of findings in Chapter Six, the literature and theoretical framework is injected to enhance the discussion.

# CHAPTER SIX

# MAPPING EMERGING PATTERNS FROM THE DATA

## 6.1 Introduction

The previous chapter presented a descriptive discussion of four main themes and fourteen sub-themes that emerged from the analysis of the interviews and documents reviews. The themes were supported with transcribed *verbatim* quotes from participants. This chapter is dedicated to presenting and discussing emerging patterns from the data analysis. I start by presenting similarities and differences of activities from participants from both rural secondary schools. This chapter focuses on discussing emerging patterns that I will relate to the data presented in the preceding chapter. I then use the theoretical framework to relate the emerging patterns to leadership practices that exist in the literature. According to Durning and Artino (2012), a theoretical framework is a blueprint that serves as a foundation upon which research is conducted.

## 6.2 Similarities and differences in both sites

It is important to bring to the fore similarities and differences in schools as research sites, as well as participants in order to give insights to their impact to the phenomenon of interest under study. I start by displaying profiles for both schools and subsequently for participants and then provide discussions on similarities and differences for each sub-topic.

### 6.2.1 Profiling both research sites

The information in Table A below describes the nature of research sites, the two secondary schools that are given *pseudonyms* as Sizwe and Themba Secondary Schools respectively in order to conceal their identities. There two features that are common to these schools that are that both schools are located in the same rural area and they are the 'No fee' schools. This means that parents are not paying schools fees. The categorisation of the two schools is appropriate given that the profiles of the majority of the members of the community were viewed as poor. This is the sentiments that were shared by the participants. The 'No fee' label is appropriate and captures the socio-economic of the community on the ground.

**Table B: Themba and Sizwe Secondary Schools' profiles**

| Schools | Themba Secondary | Sizwe Secondary |
|---|---|---|
| **Quintile** | 3 | 1 |
| **Location** | Msunduze | KwaNgcolosi |
| **No of learners** | 1761 | 667 |
| **No of classrooms** | 52 | 14 |
| **Science Laboratory** | 1 poorly equipped | 1 poorly equipped |
| **Smart Classrooms** | 1 poorly equipped | 2 poorly equipped |
| **Vocational skills centres** | 0 | 2 poorly equipped |
| **No of teachers** | 63 | 21 |
| **Fee/No fee paying** | No fee | No fee |
| **Water supply** | Water tanks | Pipe water supply |
| **Electricity** | Available | Available |

Both secondary schools are located in rural communities with multiple deprivations (Maringe, Masirine & Nkambule, 2015). There are no clean piped water supply and both schools have pit latrines for both the teachers and the learners. Both schools are a short distance from the tarred main. These secondary schools are categorised as 'No fee' schools which means that parents are, by law not allowed to pay school fees and the schools purchase stationery from Norms and Standards for school funding from the Department of Basic Education (RSA, 1996). The funding model is informed by low socio-economic status and poverty of communities in which each school is located (Jaarsveld & Van der Walt, 2018). There are provisions of Wi-Fi and there is a Computer Application Technology (CAT) as one of the elective subjects included in the curricula of both schools.

It is uncommon in a rural area to have a Quintile 3 school such as Themba Secondary School. The significance of this status of Themba Secondary School began in 2001 and it took twelve years to develop from Quintile 1 to 3. The former and retired principal started to introduce a subject that was providing learners with computer skills. Subsequently, she introduced technical subjects over a period of twelve years until it became a fully-fledged two-stream secondary consisting of humanities and technical high school in 2013. Interestingly, the support came from the Department of Education and largely the financial sponsorship from private companies at national and

international levels. There are 1671 registered learners and 63 teachers in 2021, during the period of conducting this study. The total number of standard size classrooms is 52 and two more rooms that are specially designed as workshops for technical subjects **(see Table B)**.

Sizwe Secondary School, a Quintile 1 school is comparatively a small school with the enrolment of 667 learners and 21 teachers in the syear of conducing this study. The difference in the enrolment statistics shows that Themba Secondary School receives more financial allocation than Sizwe Secondary School. Since this is the case with Themba Secondary School, there is a higher probability of affording procuring more educational resources. The school has 14 standard classrooms and 1 smart-classroom that was allegedly fully equipped initially with digital technology equipment for teaching and learning tools **(see Table B)**. Initially, there were 65 tablets and undisclosed number of laptops in 2020 (Miss Hlela, the Principal of Sizwe Secondary School & Miss Dlamini, a teacher at Sizwe Secondary School), but there were not there at the time of data generation period in 2021 at Sizwe Secondary School. This was a similar challenge that school leadership at Themba Secondary School had to grapple with. The two fully equipped classrooms with technology instruments, including undisclosed number of computers and digital projects at Themba Secondary School were used until late 2020, and they went missing just few months before I visited the school for the purpose of generating data for this study **(**Mr Zulu, a teacher at Themba Secondary School and Mr Makhoba, the Principal of Themba Secondary School). The persisting challenges of this nature and many more in rural setting is evident in many historically disadvantaged rural schools (Du Plessis & Mestry, 2019; Omodan, 2022).

Despite Themba Secondary School receiving more financial allocation because of higher enrolment of learners compared to Sizwe Secondary School, inadequacy of educational resources is similar in both schools as substantiated by Mr Pikoli and Mr Ndomela, both teachers at Themba Secondary School and Miss Dlamini, a teacher at Sizwe Secondary School (Chapter Five, Section, 5.2.3.1). Scarce educational resources include classrooms, technology-based teaching and learning instruments, as well as special tools and materials for individualised practical activities. The challenge of scarce educational resources is exacerbated by a common problem, that is frequently causing a backwardness regarding the advancements from creativity and innovations in both schools which is burglary, theft and vandalism (Zulu, Hlela, Makhoba, Pikoli & Dlamini). Mojapelo (2020a) avers that burglary, theft and vandalism, are increasing exponential where technology gadgets such as computers, laptops and photocopiers are stolen.

Both schools are connected to an electric energy grid, although electric supply is unreliable and access roads to schools are untarred. The schools are supplied with clean water but the difference is that Themba Secondary School receives clean water through pipes whereas Sizwe Secondary School has plastic tanks that are filled up by mobile water tankers on weekly basis. There are smart classrooms and science laboratory rooms but they do not have relevant equipment to support teaching and learning for the 21st century.

### 6.2.2 Profiling participants from both research sites

The profiling of participants may provide some background variables that include years of experience, qualifications and gender that may influence on the richness and depth of information that may be necessary for the study (De Vries, Jansen & Van de Grift, 2013). According to Day and Sachs (2004), participants vary in their concerns, commitments, behaviour and needs which may be informed by their status with regard to their profiles.

**Table C: Profiling participants at Sizwe Secondary school**

| Teachers | Hlela | Zungu | Zakwe | Shinga | Sokhela | Mbhele | Zikode | Dlamini |
|---|---|---|---|---|---|---|---|---|
| **Gender** | Female | Male | Female | Female | Male | Female | Female | Female |
| **Age** | 51 yrs | 36 yrs | 32 yrs | 47 yrs | 38 yrs | 48 yrs | 48 yrs | 33 yrs |
| **Qualification** | B. Ed | B. Ed | PGCE | NPDE | NPDE | NPDE | NPDE | ACE |
| **Positions** | Principal | Teacher | Teacher | Teacher | Teacher | Teacher | Deputy-Principal | Departmental Head |
| **Total teaching experience.** | 25 yrs | 13 yrs | 5 yrs | 15 yrs | 9 yrs | 21 yrs | 17 yrs | 7 yrs |
| **Total teaching experience in this school** | 21 yrs | 13 yrs | 5 yrs | 2 yrs | 9 yrs | 4 yrs | 7 yrs | 6 yrs |

**TABLE D: Profiling participants at Themba Secondary School**

| Teachers | Makhoba | Pikoli | Dube | Ndomela | Zulu |
|---|---|---|---|---|---|
| **Gender** | Male | Male | Female | Male | Male |
| **Age** | 53 yrs | 28 yrs | 51 yrs | 37 yrs | 33 yrs |
| **Qualification** | HDE | B. Ed | PGCE | B. Ed | PGCE |
| **Positions** | Principal | Teacher | Departmental Head | Teacher | Teacher |

| | | | | | |
|---|---|---|---|---|---|
| **Total teaching experience** | 28 yrs | 4 yrs | 17 yrs | 7 yrs | 10 yrs |
| **Teaching experience in this school** | 5 yrs | 4 yrs | 5 yrs | 3 yrs | 10 yrs |

This study had an adequate balance of participants in terms of gender. In terms of gender, female teachers in leadership positions contribute immensely to teachers' commitment to change (Kacmar, Bachrach, Harris & Zivnuska, 2011). However, there is gender imbalance regarding the participants in each school. There are 6 females and only 2 male participants from Sizwe secondary School, whereas there are 4 male and only 1 female participant from Themba Secondary School. All the participants are in possession of a recognised teaching qualification and there is a combination of experienced and less experienced participants. There is also a generation mix where there are younger and older participants with their ages ranging from 28 to 51 years. Each of these participants has more than 3 years of teaching experience in their current schools which is presumably an indication of each participant to have rich information that may be useful in this study **(Table C; Table D).**

### 6.3 School leadership's diverse understandings of a learning space

It is common knowledge that different people have divergent understandings and meanings of the same phenomenon (Wahlstedt, Pekkola & Niemelä, 2008). In this case, there are more similarities than differences that are unique from individual perspectives when defining a learning space. Perhaps, it is prudent to note that while a learning space is created, the type of learning modalities being pursued by school leadership must be taken into cognisance. Accordingly, it is important to note that in changing traditional classrooms into learning spaces for the 21st century alone do not automatically change teacher-centric teaching practices (Fisher, Liu & Trainin, 2021). It is in that spirit that what emerged from the participants when referring to learning spaces. Many described it as any learning environment that is created to be conducive for learning to take place. It is therefore imperative to elucidate commonality between learning space and learning environment by using the lens of participants in this regard.

Only a few participants referred to learning space as a learning environment; others described it as a classroom and most as any space where teaching and learning takes place (Chapter Five:

Section, 5.2.1). Learning environment is defined as a conceptual or psychological setting rather than a physical learning space (Cleveland, 2009). It can be noted that learning environment depends on the learning objective, the type of content and access to virtual, physical or both spaces (Moore, Dickson-Deane & Galyen, 2011). In this regard, the teaching and learning environment may either be teacher-centric or learner-centric in nature. Considerably, a space for learning is characterised by the environments that are conducive for learning to occur (Sasson, Yehuda, Miedijensky & Malkinson, 2021) anywhere (Oblinger, 2006). Drawing from the above discussion, the finding is an indication that learning space and learning environment are reciprocally intertwined and are understood to be generally interrelated. Moreover, it is noteworthy to understand that in either physical, virtual, formal or informal spaces where learning can take place, the learning environment is given the same meticulous attention as a learning space (Graetz, 2006; Thomas, 2010).

The majority of the participants referred to a learning space as a classroom that is conducive for learners to discover information on their own, as alluded to for an example by Miss Zikode, a Deputy-Principal at Sizwe Secondary School. Despite the fact that a classroom is perceived as a physical structure that was initially designed to support teacher-centric pedagogies, however, the contemporary learner-centric pedagogical practices can make classrooms viewed as learning spaces for the 21st century learning. In the same vein, a learning space was also conceptualised by most participants as a space where teaching and learning takes place, either in a classroom or outside, as well as formal or informal (Mr Ndomela, a teacher at Themba Secondary School). Of course, a classroom is a physical learning space and with the provision of all the affordances (Verdonck, Greenaway, Kennedy-Behr & Askew, 2019). It may support the 21st century learning. Overall, a learning space for the 21st century learning is defined generally as any space that support learning to take place anywhere anytime (Merriënboer, McKenney, Cullinan & Heuer, 2017; Oblinger, 2006; Oblinger & Lippincott, 2003; Olusola-Fadumiye, Harun & Oke, 2020). It is evident that most participants used their unique perspectives to make sense of the phenomenon (Creswell, 2014). School leadership with reasonable conceptualisation of learning space may, to a certain extent, successfully cast a clear and appropriate vision that transform a school to a learning space of the 21st century learning for learners.

### 6.4 Teacher proactiveness as an impetus for school leadership creating learning spaces

The proactiveness by a clique of technology savvy teachers to infuse technology in teaching and learning was the beginning of a major project that transformed the two schools into learning spaces of the 21st century learning. It began with teachers organising learners into groups to do class activities collaboratively at Sizwe Secondary School (Chapter Five: Section, 5.2.2.3). A similar practice at Themba Secondary School was initiated by Mr Pikoli. The main objective of organising learners to work collaboratively in groups was to allow them to share information among themselves and to ensure that teachers become facilitators of the learning process. This new approach of collaborative learning help learners to develops a variety of the 21st century skills that include communication, collaboration, creativity and critical thinking (Van Laar; Deursen, Dijk & De Haan, 2020).

Meanwhile, the few teachers that were in the forefront in taking this initiative, were also using their smartphones to organise their learners into WhatsApp groups for communication and for further teaching and learning beyond the schools' contact time (Chapter Five: Section, 5.2.2.4). Teacher-learner engagements continued to take place at anytime and anywhere with the use of smartphones. At some point, teachers that were leading the transformation agenda, began to systematically influence the rest of the staff members to infuse technology and transform their pedagogical practices (Chapter Five: Section, 5.2.2.1). Subsequently, after realising that most teachers were embracing their initiatives, they approached the principal who became interested, and together with other school managers, they began to encourage and support the rest of the staff members to adapt to new pedagogies (Chapter Five: Section, 5.2.2.2). The human interactions that played out among teachers is an expansion of individual abilities, an intellectually stimulating effect which is the epitome of transformational leadership (Bass & Riggio, 2006).

A similar process was also underway at Themba Secondary School where the influence to venture into new pedagogies permeated through to most staff members in a cooperative manner (Chapter Five: Section, 5.2.2.1). Apparently, other teachers in that school were observing the technology savvy teachers as they gradually migrated from an old traditional way of teaching to new pedagogies for the 21st century learning. In that way, it was less strenuous to encourage other staff members to follow suit. An example of this can be seen in Mr Makhoba's pronouncements in Chapter Five: Section, 5.2.2.2. Evidently, these new initiatives from the teachers are about the creativity process which is at the centre of leadership. What emerges is an emphasis that leadership

is a reciprocal relationship between followers and leaders with embedded flow of influence that goes both ways for the sake of an organisation such as the school (Ishak & Kamil, 2016). For this to happen successfully as it is the case in this regard, intellectual stimulation plays itself out in school leadership as one of the dimensions of transformational leadership (Bass & Riggio, 2006; Leithwood & Jantzi, 2000). Added to this notion of intellectual stimulation is the view that leadership occurs even outside of formal positions as it happened in this instance.

### 6.5 Adapting to the 21st century pedagogical practices

School leadership in both schools took the responsibility of motivating and encouraging other staff members to adapt to contemporary learner-centric pedagogies of the 21st century learning for learners (Chapter Five: Section, 5.2.2.1: Miss Hlela, the Principal of Sizwe Secondary School). This was imperative for school leadership to approach other staff members because there were some teachers that I can call 'technophobic' in the sense that they hated new technologies in teaching and learning. They were adamant and resisted any form of transformation, sticking to their outdated traditional teacher-centric pedagogical practices. Miss Hlela, the Principal of Sizwe Secondary School attested to this reality when she claimed that there are older teachers who do not have much knowledge of technology (Chapter Five: Section, 5.2.3.2). Similarly, Miss Zikode, a teacher at Sizwe Secondary School claimed that she is too old to use technology (Chapter Five: Section, 5.2.3.2). According to Van Deventer (2022), it is a natural human reaction to resist change, and such resistance emanates from the fear of the unknown. Therefore, it becomes the responsibility of school leadership to address this challenge for schools to thrive by motivating, encouraging and inspire teachers to develop positive attitude towards transformation.

School leadership organised professional development workshops for the teachers. The school principal took an initiative to support teacher innovations by organising a teacher professional development workshop about the new ways of teaching in the 21st century which was conducted by a service provider (Mr Zungu, a teacher at Sizwe Secondary School). Teacher professional developments are some of the measures to address a primary concern of whether teachers have sufficient competencies to adapt and effectively conduct teaching and learning of the 21st century (Zhang, Shi & Lin, 2020). The emphasis of school leadership empowering teachers on pedagogical competencies is underscored by a deep consideration of the influence of pedagogical practices in the effectiveness of creating innovative learning spaces (Imms & Byers, 2017).

### 6.6 Enhancing and sustaining teacher competencies for innovations

This theme emerged prominently when school leadership practices enhanced and sustained teacher competencies by ensuring that the necessary educational resources are always available and accessible. For example, Mr Makhoba, the Principal of Themba Secondary School stressed that the School Finance Committee was going to review the school budget and the allocation of funds in order to direct more funds to replace the much-needed educational resources such as computers that at some point were stolen and then install Wi-Fi facility (Chapter 5: Section, 5.2.4.3). In the case of Themba Secondary School, the Principal, Miss Hlela affirmed that there was going to be a top-up of laptops from the current and subsequent years' allocated funds until the projected number of these gadgets was adequately reached (Chapter Five: Section, 5.2.4.3). With those ongoing inspirational leadership practices of providing the effective utilisation of valuable resources, they become a catalyst to enhance and sustain teacher competencies for the 21st century pedagogies and innovative learning spaces (Alfrey & O'Connor, 2022). For this to happen, it is an indication that school leadership draws on the same repertoire of basic successful leadership practice by supporting the desired practices from teachers (Leithwood, Harris & Hopkins, 2020).

It has come to light that school leadership was consistent in creating an environment that inculcated a sense of trust and information sharing among staff members. Evidently, the school environment created allowed individuals to share with other staff members their pre-existing knowledge from their past experiences about the new worldview in the education landscape. To this effect, Mr Zungu, a teacher at Sizwe Secondary School stressed that he assists other teachers who encountered technology-based challenges as their mentor which at a larger extent empowers teachers to be innovative in their pedagogies and learning space for the 21st century learning (Chapter Five: Section, 5.2.4.1). On the same breadth, Miss Hlela, the Principal of Sizwe Secondary School averred that school leadership used platforms such as staff meetings to motivate and encourage staff members to infuse technology in their pedagogical practices (Chapter Five: Section, 5.2.3.2). Such developments among staff members provide evidence of the blurring of boundaries of leadership responsibilities that supersedes traditional hierarchical mode of operation (Uphoff, 2010). Therefore, school leadership is perceived to be promoting a positive learning climate which demonstrates an instructional leadership dimension (Hallinger & Murphy, 1985).

## 6.7 Collaborating with multiple stakeholders for teachers to venture into the 21st century behavioural practices

This theme emerged as it becomes imperative that all stakeholders play their critical roles in ensuring that there is a successful transition from outdated traditional practices to a technologically based constructivist learning spaces. Constructivist learning space refers to a learning environment that intends to provide learners with effective and meaningful learning environment through learner constructing a meaning for what he learns on his own through using technology (Arraba, 2022; Majumder, 2022). The influence of infusing technology in teaching and learning in the case of Sizwe Secondary School was from former learners who were at institutions of higher learning and put a constructive challenge to their former school for not teaching basic computer skills (Chapter Five: Section 5.2.3.2).

A similar impetus at Themba Secondary School was from their former learners who were compelled to begin doing computer courses at private institutions after completing their matric (Mr Makhoba, the Principal of Themba Secondary School). The principals of both schools began the process of introducing computer related subject in the school curricula. In this regard, both principals were concerned about their former learners on their experiential difficulties which influenced them to take initiatives of addressing these challenges for the current crop of learners in lower grades. These developments may be perceived as an individual stimulation on the principals by their former learners. Individual stimulation is a transformational leadership dimension (Bass & Riggio, 2006).

## 6.8 Mapping the challenges that schools encountered in adapting to the 21st century teaching and learning

The practicality of teachers adapting to and matching the pedagogical practices with learning spaces they intended to create have encountered challenges of various kinds. Most of these challenges are common in secondary schools that were research sites for this study. The challenges include, scarce technology-based educational resources, unreliable supply of electricity, the lack of parent involvement as well as burglaries, vandalism and theft.

### 6.8.1 Scarce technology-based resources that are critical for the 21st century teaching and learning

The scarce technology-based resources are one of the main barriers for teachers to adapt to the 21st century teaching and learning approach. Mr Pikoli, a teacher at Themba Secondary School lamented about the limited number of digital projectors, laptops and tablets. Mr Ndomela, a teacher at the same school as Mr Pikoli and Miss Dlamini, a teacher at Sizwe Secondary School shared similar views and experiences in this regard. The scarcity of resources in schools causes teachers to be resistant to transformation imperatives, and want to stick to their traditional approaches to teaching (Mogachoa, 2021). Their attitudes and behaviours counteract efforts at creating learning spaces for the 21st century learning for learners. There are teachers in both schools that are continuing with outdated traditional teacher-centric didactical practices such as Miss Dlamini, a teacher at Sizwe Secondary School and Mr Ndomela, a teacher at Themba secondary School. According to Alfrey and O'Connor (2022), scarce technology-based resources make transformation to the 21st century teaching and learning less likely to occur.

It is understood that the reason for the scarcity of technology-based resources are not only about financial constraints, but burglary and theft are some of the causes (Creswell, 2014). Some schools shy away from purchasing computers for their learner because of fear of incurring high costs for replacing stolen and obsolete devices (Amushigamo, 2017). In this situation, school leadership is faced with a dilemma of "running out of ideas" due to the social influence on stakeholders for the developments already made for the 21st century teaching and learning on one hand. On the other hand, it looks like developments towards the 21st century behavioural practices are undermined and nullified by the continued negativities around the scarcity of educational resources (Omodan, 2022). Indeed, this challenge and many others such as burglary, vandalism and theft of technological devices deepen the digital divide and exclude learners from disadvantaged backgrounds especially in rural settings from the 21st century teaching and learning environments (Chisango & Marongwe, 2021).

### 6.8.2 Unreliable supply of electricity hinders efforts at infusing technology in teaching and learning

The supply of electricity proved to be a major challenge because technological gadgets such computers and digital projectors need electric power to function. The participants that shared their

frustrations on unannounced electricity outages that take too long to be fixed included Miss Hlela, the Principal of Sizwe Secondary School, Miss Zikode, a teacher at Sizwe Secondary School, Mr Pikoli and Mr Ndomela, both are teachers at Themba Secondary School. This challenge of electricity resonates with Muhumuza, Zacharopoulos, Mondol, Smyth and Pugsley (2018), when they point out that electric energy remains a key problem and a challenge in rural communities. This challenge among others, hinders instructional leadership practices of the school principal. According to Hallinger and Murphy (1985), the school principal as an instructional leader must manage the curriculum with activities of supervising and evaluating instructions.

### 6.8.3 The lack of parental involvement in creating learning spaces that best support the 21st century learning for learners

Parents are important stakeholders in creating learning spaces, especially when they need smartphones for distance learning engagements and the creation of informal learning space. Emerging from the data is the prevalence of the majority of parents who do not want to participate in the affairs of the school despite being invited even to address the issues related to their children (Ndomela, a teacher at Themba Secondary School; Mr Sokhela, a teacher at Sizwe Secondary School; Mr Zulu, a teacher at Themba Secondary School). According to Myende and Nhlumayo (2020), it is difficult to bring parents on board to work collaboratively with the teachers on issues affecting their children's learning. Similarly, the lack of parental involvement from rural areas is also experienced in international contexts such as in China (Xie & Postiglione, 2016) and in New Zealand (Hornby & Witte, 2010) to mention a few. In this case, it has remained difficult to get parents in South African rural areas involved in their children's education. This challenge among others stalls the process of transforming rural schools to be relevant in the 21st century education landscape.

### 6.8.4 The scourge of burglaries, vandalism and theft in schools

The challenge of burglaries, vandalism and theft takes place frequently as thieves target technological devices such as computers, laptops and tablets. Makhoba, the Principal of Themba Secondary School shared his concern that the latest burglary, vandalism and theft took place during load-shedding at the time when security cameras that were also stolen would have assisted in identifying the culprits. A similar challenge of burglaries, vandalism and theft is prevalent at Sizwe Secondary School as Miss Hlela, the Principal mentioned that 65 tablets and all undisclosed

number of laptops were stolen within two consecutive nights when security personnel were held hostage. On the same challenge of stolen valuable school property, the emphasis of this scourge was also echoed by Mr Pikoli, Mr Ndomela and Mr Zulu; all are teachers at Themba Secondary School. The same challenge of burglaries, vandalism and theft were also raised in detail by Miss Dlamini, a teacher at Sizwe Secondary School which resonate with the information that was shared by Miss Hlela, the Principal of Sizwe Secondary School.

The fact that computers and other digital technological devices are still very expensive makes them a target for thieves (Schlechter, Syce & Bussin, 2016). This scourge of burglaries, vandalism and theft is evident to the vulnerability of rural schools to breaks-in, vandalism and theft and concerted efforts should be put in place to ensure that security and safety of school property is prioritised (Abraham & Ceccato, 2022). However, burglaries, vandalism and theft seem to proliferate in rural areas because crime prevention programmes have long been urban-centric, which has resulted in a tendency to ignore the uniqueness of rural contexts (Abraham & Ceccato, 2022). It is under these conditions of the lack of strategic crime preventing initiatives to prevent the continuing burglaries, vandalism and theft of technology devices in rural schools that the positive effects of transformational and instructional leadership do not emerge (Grissom, Egalite & Lindsay, 2021). The next question that comes to mind is about what can be done to mitigate the effects of all these negative stories about rural areas and the schools' attempts to implement quality education

### 6.9 Strategies adopted by school leadership to mitigate the negative effects of the challenges

The school managers with the principal as the most senior in both secondary schools made concerted efforts in ensuring that there is continuity in transforming the respective schools from outdated traditional teacher-centric practices to the 21st century learner-centric pedagogical practices. With regards to the stolen technology devices, the swift reaction was to ensure the replacement of the devices. Meanwhile, the ongoing teacher professional development was maintained and other measures to strengthen the safety and security of school property had become the main focus.

### 6.9.1 The replacement of stolen school property

The finding is that schools had only one option in order to keep the momentum for transformation going whilst awaiting the replacement of the much-needed technology gadgets once again for usage by the teachers. It is noted in this regard that most teachers have WhatsApp groups for interacting and engaging learners to continue learning beyond the physical classroom environments (Chapter Five: Section 5.2.2.4). Nonetheless, the creation of 21st century learning spaces does not only rest with technology usage all the time in the classroom environment. The physical learning spaces are also created by rearranging learners' furniture for collaborative learning in groups (Neill & Etheridge, 2008).

The way for teachers to have computers, laptops and digital projectors and other teaching resources replaced from those that were stolen on different occasions is for schools to wait for other financial injections from the Norms and Standards in terms of Section 34 of SASA (RSA, 1996) inthe following year. The provision of the necessary resources by school leadership for effective teaching and learning is the responsibility of instructional leadership. The prevailing conditions of the schools immediately after burglaries, theft and vandalism had taken place, are subjecting teachers to partially revert to traditional teaching approaches whilst waiting for new technology gadgets. This compelling undertaking by the teachers was found to be similar across the two schools as the teachers were also grappling with a challenge of unreliable electricity power supply (Chapter Five: Section 5.2.3.6).

To rub salt to the wound, there is another challenge relating to intermittent internet connectivity. Therefore, the use smartphones to access online information through hotspot is the only option for schools to mitigate the inability to access Wi-Fi because of vandalised infrastructure. In this regard, teachers use their personal gadgets and hard copies to maintain learner-centric pedagogical practices (Chapter Five: Section, 5.2.2.2 & Section 5.2.2.4). These actions are the means taken by school leadership and teachers alike indicate their intention to protect instructional time. In other words, they try their best to ensure that despite all these challenges, curriculum delivery remains at the highest level possible. According to Stallings (1980), the success in alleviating the negative impact caused by the interruptions to learning time can increase the potential of learner achievement. Of course, this kind of behavioural practices by school leadership and teachers is enabled by the school learning climate that is promoted by school leaders.

The school learning climate is one of the dimensions of instructional leadership model articulated by Hallinger and Murphy. Moreover, Leithwood, Jantzi and Steinbach (2000) aver that instructional leadership is an approach that school leaders use by focusing on the teachers' behaviour in their pedagogical activities that indirectly, impact on learners' academic achievements. In this regard, instructional leadership style is therefore, related to the implementation and the promotion of teachers' innovations (Mestry, 2017). Teachers' innovative ways broadly include transforming traditional teacher-centric learning approaches to learner-centric pedagogical practices for the 21st century learning for learners. The pedagogical practices for the 21st century learning become a success when the teachers create learning spaces that best support the 21st century learning modalities.

### 6.9.2 Professional developmental workshops for teachers to enhance their competencies

Professional developmental workshops are one of the empowerment strategies that school leadership of both schools used to support teachers in transforming their traditional teaching and learning. Notwithstanding an emerging reality that school leadership seems to lack the capacity of developing the staff on their own, they promote and emphasise the importance of professional development which is one of the instructional leadership behaviours (Hallinger & Murphy, 1985; Murphy, 1990; Weber, 19996). School managers sought the support from the Department of Basic Education to provide them with advanced digital technological resources and staff developmental workshops. Mr Makhoba, the Principal of Themba Secondary School emphasised his intention to invite Subject Advisors and the Department of Education to take responsibility of staff developments on the new ways of infusing technology in teaching and learning (Chapter Five: Section, 5.2.4.4). However, teachers from Sizwe Secondary School had attended staff developmental workshops as a response from the request made earlier to the Department of Basic Education by the principal.

Transformation towards the 21st century pedagogies and learning approach is interwoven with the creation of learning spaces that best support the 21st century learning for learners. There is a general notion emerging from data that school leadership may not have all the knowledge and the expertise of how teacher professional development for transformation towards the 21st century learning for learners can be done (Chapter Five: Section, 5.2.2.2). With that in mind, school managers sought the services from companies and individuals with digital technology expertise to develop and empower teachers to be innovative in infusing technology into teaching and

learning. The kind of teacher development alluded to above is of common practice that is similar to the study conducted by Dunuwila (2012). The finding is consistent with that of the school leader from Kanton High School, under the jurisdiction of the United States (US) Department of Education. The revelation is that school leader called on teaching artists from the Institute of Creative Education (ICE) for teacher development in order to make the shift from the traditional "chalk and talk' teaching practices.

Learning through professional development enhances the collective ability of teachers to actualise creativity and innovativeness of learning spaces (Young & Cleveland, 2022). This significant shift towards more learner-centric and project-based pedagogies of the 21st century learning is important. Since this is the case with teacher development in both schools, it may be perceived as an approach attributed to one of the norms alluded to by Hallinger (2010) and Hallinger and Murphy (1985). These scholars put emphasis on such leadership activity that is no less that the creation of a climate for change while supporting the ongoing improvement of teaching and learning. This is the epitome of instructional leadership as one of the strategies among many of protecting instructional time from unprecedented loss (Hallinger, 2005a). Overall, all what school leaders are doing in terms of outsourcing teacher professional development is perceived to be acknowledging their lack of capacity and expertise to handle the dynamics of the 21st global education landscape.

### 6.9.3 Safeguarding rural schools from burglaries, vandalism and theft

Burglaries, vandalism and theft is prevalent in rural schools and that causes immediate and long-term harm to the creation of learning spaces for the 21st century learning for learners. These schools are experiencing the loss of valuable assets, which are mainly the technology instruments that are the backbone for the creation of learning spaces for the 21st century learning for learners. In curbing these unprecedented criminal activities, school leaders have taken divergent preventative and mitigating measures to address this problem. The preventative and mitigating measures include strengthening security. Generally, schools in South Africa are provided by the DBE with security personnel employed to work during the school contact time. Apparently, the Department of Education is perceived to be concerned and is responsible for the safety and security of learners and teachers during the school day (Mapaya, Litshani & Sinthumule, 2021). In this regard, rural schools are vulnerable to burglaries, vandalism and theft during these times (Ncontsa & Shumba, 2013).

What has emerging from data is that various campaigns have been lodged by school managers to seek the support of the surrounding communities and parents in order to strengthen security against the damaging losses from burglaries, vandalism and theft in rural schools. Hence, public schools especially the No-fee paying schools in Quintile 1-3 in South Africa have no security personnel because of the lack of funds to pay for such service (Mapaya, Litshani & Sinthumule, 2021). However, a certain percentage from financial allocations to schools as Norms and Standards (Section 34 of SASA, Republic of South Africa, 1996) is inadequate to employ more than one security personnel for nightshifts. Most importantly, issues around parent-school-community partnerships (Elias, Patrikakou & Weissberg, 2007) and parental involvement (Myende & Nhlumayo, 2020) have again found traction in rural schools. They are critically important for the educational success in the 21st century (Christenson, Rounds & Franklin, 1992). Moreover, it is crucial for school leadership to acknowledge and synchronise the performances of other stakeholders such as parents and the community.

Open partnerships that create a bond between schools and stakeholders (Adam & Muthiah, 2020) creates synergies that enhance the cultural and social capital within the communities and families that will ensure safety of learning spaces (OECD, 2015a). However, it is critical to note and recognise stakeholders that contributed immensely in creating learning spaces for the 21st century learning for learners in secondary schools located in rural setting. School leaders inform parents during parents' meetings about each incident of burglary, vandalism and theft that had occurred. By so doing, parents feel themselves as part of the mainstream culture of the schools (Elias et al., 2007). Certain decisions of what must be done and commitments are taken. A common feature between the two school leaders is their respective resolve to re-install floodlights and security cameras that were vandalised during burglaries. However, these security cameras need to be manned on continuous bases. This implies that security guards have to be appointed to strengthen security through monitoring of these cameras. In addition, other stakeholders such as parents also have a role to play in this regard.

The action of school leaders to invite parents to meetings and report about incidents of burglaries, theft and vandalism is the opportunity for them to set a tone of creating effective channels of communications with stakeholders (Le Fevre & Robinson, 2015). Most importantly, parent-school-community partnerships (Elias, Patrikakou & Weissberg, 2007) should be founded and forged within enduring developmental and relational realities that are persistent over a period of

time (Elias, Tobias & Friedlander, 2002). Generally, under normal circumstances, when parents are invited to schools for various reasons pertaining to either their children's behaviours or learning challenges, parents mostly do not cooperate with the school (Chapter Five: Section 5.2.3.3). It is a common practice in schools that stakeholders are immediately informed about incidents of burglaries, theft and vandalism in schools. Of course, the Department of Education is the first to be reported about incidents of this nature and subsequently, opening a criminal case at the nearby South African Police Services (SAPS) station. Unfortunately, in all the incidents of criminal activities in these schools, neither suspects had been apprehended nor were the stolen properties recovered at the time data was generated from these schools.

Mr Makhoba, the Principal of Themba Secondary School sought the intervention of preventative strategies from parents, surrounding communities to respective schools and the South African Police Services (SAPS). In the absence of formal control of these partners that school leadership has to rely on their consensus-based interventions, and the establishment of trusting relations remains their responsibility to address (Reypens, Lievens & Blazevic, 2020). Meanwhile, Sizwe Secondary School sought the support from parents and the community to protect the school property (See Figure 3 & 4 of Chapter Five: Section, 5.2.4.2). Notably, the central feature of school leadership is about the notion of influence by individual or group to others in redirecting their activities in an organisation (Leithwood, Jantzi & Steinbach, 1999; Yukl, 2000).

## 6.10 Conclusion

While it is imperative that globally, learning spaces are created to support the 21st century learning and pedagogical practices, school leadership in rural secondary schools thrive to be creative and innovative despite constraints of rurality at play. The discussions on findings reveal the degree of influence on individuals from different avenues contribute to the kind of behaviour displayed by individuals in a school setting. The diverged contributing factors include two categories of teachers. There are 'technophobic' teachers that were initially adamant against the infusion of technology in their pedagogical practices and the second category is that of technology literate, highly inspired to be creative and innovative in their profession. Quite remarkably, the behavioural practices of technology literate category of teachers became influential to technophobic teachers to enter into the fray of gradually abandoning traditional teacher- to learner-centric pedagogical practices. This kind of transformation is made possible by the concurrent creation of the learning

space that best support the envisaged learner-centric pedagogical practices of the 21st century learning for learners.

# CHAPTER SEVEN

# TAKING OFF THE GROUND: ABSTRACTIONS FROM THE THESIS

## 7.1 Introduction

Chapter Six presented a discussion about the key themes from the data that was presented in Chapter Five. In this chapter, I present an abstraction from the thesis. Abstractions from a thesis can be understood as a critical and in-depth expansive account of the new knowledge that emerges from the findings of the study. In doing this abstraction, I begin by providing a brief background of what necessitated the study of this nature, both in terms of context and philosophical orientation. I then present the kind of contribution that the study makes to knowledge in relation to the initiatives and activities of school leadership in creating the learning space in spite of complex rural settings at play. The conclusion for this chapter will be the last section to present.

## 7.2 Brief reflection on the background to the study

The 21st century has given effect to economic activities to undergo drastic changes because of the disruptive behaviour of rapid technology innovations (Oke & Fernandes, 2020). These changes require the workforce with requisite skills of the 21st century that must be embedded in the basic education sector (Teng, Ma, Pahlevansharif & Turner, 2019). In this regard, technological innovations have resulted in a paradigm shift in the global education landscape (Shahroom & Hussin, 2018; Syakur, Fanani, & Ahmadi, 2020) in order to develop the workforce competencies of the 21st century and beyond (Simons & McLean, 2020). The paradigm shift demands that each country responds appropriately by embracing and supporting the transformation agenda of its education system (Manda & Dhaou, 2019) so that no learner is left behind in the social and economic benefits from the intensive knowledge global economy. However, the most economically developed countries globally have managed to harness their resources in transforming their education systems. On the same breadth, developing countries such as South Africa, India, Nepal, Pakistan and Bangladesh have not managed to transform their traditional education systems into the 21st century learning (Mathrani, Sarvesh & Umer, 2022). They are confronted with a multiplicity and multifaceted challenges, and these have undermined their efforts and abilities to embrace the new methods of teaching in classrooms found in most multi-

disciplinary contexts. Their continued over-reliance on traditional methods is incongruent with learning spaces that foster learner-centric pedagogies.

The reality is that conventional teaching practices were relevant to the education system that was a product of the industrial revolution of the previous centuries, which are no longer relevant in the digital world. To date, learning spaces are central to all the factors that leverage learners developing 21st century learning skills. Factors include among others, teachers professional training and development, as well as the transformative mindsets of the incumbents in the education fraternity. Sadly, the majority of the learners does not have access to the transformed education that features better learning spaces for the 21st century. Teacher-centric pedagogies which are still found dominant in the school system today tend to minimise the learners' opportunities of developing the required 21st century competitive skills that are relevant for global demands. However, winds of change from the old to the new world order have begun to blow globally in the education fraternity. Sensibly, there are indications of transforming schools into learning spaces for the 21st century learning, but this is not happening as swiftly as one would expect in the context of developing countries. Some schools are already in advanced stages of transformation into learning spaces that support learner-centric pedagogical practices. It is worth noting that the actual transformation takes place in the classrooms where teachers and learners interact and engage with each other (Nelson, 2022).

Generally, the expectation is that teachers in formal leadership positions, school managers, advance the new ideology that goes beyond the current dispensation, which include traditional classrooms and teacher-centric pedagogical practices. This study has brought to the fore the new understanding that the initiatives of transforming schools from traditional practices to contemporary approaches of the 21st century may not necessary be the exclusive domain of school principals (Liu, Li & Huang, 2022). Apparently, teachers that are not in formal leadership positions who seem to understand how technology savvy people learn in the 21st century use the opportunity of non-existence of policy framework to take initiatives of transforming their schools. In so doing, the realisation of their endeavour from this study is through their initiatives of adapting to learner-centric pedagogies by infusing technology in and outside traditional classroom environments as a 'make-shift-do' learning spaces that best support the 21st century learning approach. Therefore, it becomes critical in the search for deeper understanding of how ordinary teachers in rural secondary schools in particular with multiple deprivations, manage to create learning spaces and concurrently, adapt to learner-centric pedagogies of the 21st century learning

for learners. This understanding is based on current scholarship which suggests that globally, the most economically developed countries such as those in the OECD began with the multi-million dollars financial investment in educational infrastructural redevelopment that included the provision of digital instruments and other resources (Brown, McCormack, Reeves, Brooks & Grajek, 2020; Cardellino & Woolner, 2020). Notably, not all countries globally, such as the developing ones, have the capacity to provide financial support and educational infrastructural development because they experience financial constraints (Weidman, 2022). It is in this regard that countries have greater responsibility to establish priorities that are attributed to their own contexts and resources (Shohel, Shams, Ashrafuzzman, Alam, Mamun & Kabir, 2022; Weidman, 2022). It is on the basis of this backdrop that I present a detailed account of the new knowledge that is emerging from the study that was conducted in two secondary schools, located in rural settings of South Africa. The focus of this study is on school leadership activities in creating learning spaces that best support the 21st century learning in rural settings. AS I indicated elsewhere in this thesis, my conception of school leadership is an inclusive one which refutes the notion that school principals, deputies and departmental heads are the only constituents of this term.

### 7.3 The theoretical contribution of this thesis to the knowledge

This section is critical for this thesis to bring to the fore its contribution to the body of knowledge (Hulme. 2021). This is the hallmark of any PhD thesis. The presentation spans from learning spaces as a new critical discourse that broadens the horizon and a paradigm shift. This new knowledge emerged from my reflection and critical engagement with the findings to extract the significant issues that highlight fresh and insightful notions of school leadership and its activities in creating learning spaces despite the adversities brought about by rural contextual factors that are at play.

#### 7.3.1 Learning space as a generic inclusive phenomenon

The inclusive nature of learning spaces for the 21st century learning can be attributed to new ideas and a great deal of collaboration, support and time from key stakeholders such as school managers and teachers. The generation of new ideas is a function of individuals both in formal and informal learning spaces, as well as thought process that play out in social environments that result in making conscious decisions (Amenduni, Ryymin, Maetoloa & Cattaneo, 2022). At some point, as

individuals in the teaching fraternity interact with others within the social and educational environments, new thoughts, ideas and experiences emerge. As such, the interactions of these individuals provide them with opportunities of knowledge sharing, thus, building a sense of belonging within the groups (Li, Grimshaw, Nielsen, Judd, Coyte & Graham, 2009). In this sense, regular interactions and engagements of teachers firstly, between themselves and secondly between school managers and then, with learners are critical for the realisation of the new vision and practices of and within the learning spaces.

A small group of teachers is formed by members that are the key role players in ensuring that their colleagues fully embrace the infusion of technology in their pedagogies and concurrently, create learning spaces that best support the practices is being realised (Jaya, Zaharudin & Yaakob, 2022). The reality is that members of the group that are apparently proactive in creating learning spaces and adapt to new pedagogical practices does not mean that all of them engage in practices using the same approach (Campbell, Wenner, Brandon & Waszkelewicz, 2022). However, despite the disparities of individual creativity and innovations in creating learning spaces that best support the 21st century learning for learners, teachers strive toward the realisation of this common goal.

Understanding that teachers' past learning experiences are complex and dynamic, their teaching and learning styles are more likely to differ as well. Therefore, the expectation is that their understanding and configurations of learning spaces will determine the style of teaching and learning (Martinez-Maldonado, Yan, Deppler, Phillips & Gašević, 2022). Notably, at the core of such high expectancy are the contributing factors that include, among others, the continuing dialogic communications among teachers (Camilleri, 2020). Teachers use social media platforms to interact with one another and with the learners. This practice began with a small group of members of the community of practice embracing different ideas and understandings of the necessity for new approaches to their professional responsibilities. Ultimately, the majority of teachers embrace the strategies of creating learning spaces emanating from formal and informal deliberations from their continuing dialogic communications after finding common grounds regarding the subsequent steps to take. With that rich information at hand, it then permeated to the rest of the teachers through informal technology-based means of communications. At some point, it became ripe for a clique of teachers to present on behalf of most technology-savvy teachers who want to venture into the 21st century teaching and learning approach. In this regard, five teachers presented their proposals of what they had already implemented and was in progress at Sizwe Secondary School (Mr Zungu, a teacher at Sizwe Secondary School). A similar approach was used

by few teachers at Themba Secondary School when the principal acknowledged during the interview that he was approached by teachers to present their proposals of infusing technology in their lessons (Mr Makhoba, the Principal of Themba Secondary School). All the developments in both schools are a product of leadership activities of individuals not, occupying formal leadership positions in their respective schools.

The organisational innovative climate of the schools enabled school leadership to recognise and value the perceived cognitive processes and ideas that play out when they are actualised by the teachers. Cognitive processes involve critical thinking, creative thinking, and meta-cognition (Pacheco & Herrera, 2021). According to Hsu and Fan (2010), innovative climate is an organisational setting that allows the successful implementation of useful creative ideas offered by the subordinates. In this regard, interactional approaches (Amabile, 1983) between school managers play out significantly, as teachers get the material on request and teacher developmental support in the implementation of innovative alternatives to traditional classrooms. This reactionary stance of school managers is overtly an indication of collaborative disposition (Mestry & Govindasamy, 2013). Indeed, the innovative climate in schools and the interactive approach between school managers and teachers within the context of work-related environment (Shalley, Gilson & Blum, 2000) are the essential motivating factors that foster extended possibilities for improvements in their endeavours.

### 7.3.2 Broadening the horizons through teaching and learning spaces

Learning spaces give the school leadership the impetus to broaden the horizon in exploring new strategies and avenues for teaching and learning to remain relevant to human, social and economic emancipation among others (Shava & Vyas-Doorgapersad, 2022). The impetus amplifies the democratisation of digital communications with the role of information technologies relocating powers and authorities from those in formal leadership positions in education to ordinary teachers (Kadir, 2022). School leadership activities included influencing teachers that were still adamant to adapt to new pedagogical practices of the 21$^{st}$ century learning through innovations. Furthermore, teachers were provided with the necessary resources on request and were motivated and empowered through professional developmental workshops about how best they may adapt to new behavioural approaches of the 21$^{st}$ century.

It is in this regard that the kinds of learning spaces that teachers create among many give them the opportunity to continue exploring new ways of doing things differently when teaching and learning, not bound by time and space (Wang, 2022). In the same vein, the concurrent continuity of exploring new ways of reconfiguring classrooms as learning spaces cultivates a variety of approaches to transform the overall structure of the school (Niemi, 2021). Meanwhile, the infusion of technology in teaching and learning according to Wang (2022), enables the learners to broaden the horizons in terms of accessing sources of relevant content that is within the prescripts of the curriculum (Chapter Five: Section, 5.2.2.4).

It is worth noting that the expected proactiveness of leaders in formal positions is currently not necessary the case. Hence, leadership is not the exclusive domain of incumbents in formal leadership positions but, it is an outcome of synergetic engagements and interactions among subordinates, leaders, and their environment (Spillane, 2005). This kind of understanding enables ordinary teachers to unlearn preconceived and outdated beliefs, and this enables them to unleash their potential and expertise to push the parameters of creativity and innovations even further. Currently, the activities by the subordinates are amplified by the affordances at their disposal and the understanding of new ways of how learning occurs in the 21$^{st}$ century (Young & Cleveland, 2022). These new developments are the enablers among others for subordinates to push boundaries beyond the scope of the pre-defined and regulated behavioural practices (Woolner, 2010; Yeoman & Wilson, 2019) that are generally not reviewed timeously for their relevance to the current social and global economic demands. Indeed, this thinking prowess rests on the nation that is abreast and well-informed about the required and relevant 21$^{st}$ century skills that must be developed in the learning processes. With this kind of ongoing access and exposure of school leadership, teachers and learners to different sources of information (Kgati, 2022). It then empowers them to collaboratively reconfigure classrooms as learning spaces that continue to evolve and teachers demonstrate through their behaviours by adapting to the new approaches of learner-centric pedagogies.

The creation of learning spaces has brought to the fore a general understanding that the new beginnings start within cliques and then permeates broadly to the community. Hence, this undertaking has enabled the philosophical system of bottom-up approach to be of great success and worthwhile for schools to thrive (Becker, Siemon & Robra-Bissantz, 2022). It is therefore, critical that the incumbents in leadership positions begin to learn anew by being cooperative and engage with their followers. It is also critically important that leaders acknowledge, value and tap

on the influential capacity of knowledgeable people within nations that bear high levels of cognitive thought processes and are highly passionate in their endeavours for the benefit of the majority going forward. This thesis has uncovered this notion of school leadership stepping into unchartered territories that are beyond the scope of pre-determined roles and responsibilities of incumbents in the teaching profession as enacted in the revised PAM document (RSA, 2016: Government Gazette No. 39684).

### 7.3.3 Learning spaces as agency for change

The concept of learning spaces has become an instrument for meaningful change to takes place in any school (Martinez, 2022). Apparently, the new non-routine approach for change in schools that emerges from the concept of learning spaces has given effect to unsettling the normative practices in traditional classrooms (Bülow, 2022). In this regard, learning spaces concept has brought about the new understanding that highly passionate and knowledgeable subordinates that think out of the box can become the kingpins for change initiatives (Faupel & Süß, 2018). It is noted that when school leadership is not proactive in enacting either policies or rules in initiating and regulating change from traditional classrooms into the learning space, teachers take it as their responsibility to give school managers an impetus to take their leadership responsibilities (Chapter Five: Section, 5.2.2.3 and Section, 5.2.2.4).

An important lesson learnt from the learning spaces discussions is that the non-existence of policy framework or guidelines for school leadership to transform traditional classrooms into different types of learning spaces, teachers push boundaries (Hai, Van & Thi, 2021) at any given time and context for the realisation of this endeavour. Such a development in schools makes learning spaces concept to be perceived as an overarching setting, a centrepiece and an architect for overall bottom-up transformation of the entire school environment in a relatively mechanical way (Niemi, 2021). This development is made possible from the influential undertone for change borne by subordinates in prompting incumbents with vested leadership powers bestowed on them to act according to their own terms. It is on this backdrop that learning spaces concepts and practices become an agent of change resulting in leadership to understanding and embrace the emerging paradigm shift in the overall school environment underpinned by initiatives of the subordinates. Apparently, the behavioural activities by teachers of stimulating school managers to try new approaches for school transformation is uncommon.

### 7.3.4 Learning spaces notion in a community of practice

Not the ordinary thinkers and teachers may buy into the philosophy of learning spaces until the members from the community of practice provide insights on new phenomena (Wenger, 1998). The community of practice is a group of people who have their identities defined by the relationships they share and the roles they play that are connected by a common interest (Riel & Polin, 2004). Members of this community use communication strategies that keep them informed about new information and developments because they are always in touch (Wenger, 1998). They normally reflect on their own understanding of what is important and develop practices around issues that matter to learners and their profession the most. It is noteworthy to acknowledge that not all people within the same profession are always on par with new trends in education fraternity of the 21st century. It begins with a clique of deep thinkers with high ability of thinking prowess to deliberate on critical matters of evolution in their profession that require drastic changes that the majority is overlooking (Mr Zulu, a teacher at Themba Secondary School). The existing reality of understanding transformation is that it is not a characteristic of a single teacher or a clique, but that it is a social compact and cultural systems (Scheiner, 2022).

The notion of cliques is that they are a source of powerful influence to others in the same environment to collaborate for the bottom-up approaches to effective transformation. Indeed, this has been the case that played out when the creation of learning spaces came into fruition despite the key role-players having to grapple with a plethora of constraints. Perhaps, the most important contributing factor among others, is that of them focusing on optimising specific characteristics of concepts of common interest when members interact with each other, and build a sense of belonging to the group and share knowledge (Li, Grimshaw, Nielsen, Judd, Coyte & Graham, 2009). Members of this small group of teachers develop a strong relationship that overshadows other contextual concerns. They begin to put their theory into practice through creativity and innovations when they are reconfiguring traditional classrooms into the learning space for the 21st century learning for learners. Mr Zungu, a teacher at Sizwe Secondary School played a pivotal role in volunteering to empower his colleagues that were encountering challenges in using technology-based educational resources (Chapter Five: Section, 5.2.4.1).

The strong relationship and agility of the small group of teachers to promote knowledge exchange within the group makes interventions to interact and engage the rest of teachers influencing them to pursue contemporary approaches from their routine practices. However, the consistency and

the influential capability of small group of teachers and with the support of school leadership contributed immensely for the rest of teachers to heed the call. Nonetheless, the notion of teachers being highly observant and to use their thinking aptitude sensibly when members of staff take an initiative to put theory into practice (Mr Zungu, a teacher at Sizwe Secondary School; Mr Zulu, a teacher at Themba Secondary School), also plays an important role for all of them to heed the call. In this regard, school leadership and teachers develop their own culture and communication methods in order to share their activities and support one another in the plight of further improvements (Riel & Polin, 2004). These developments are the epitome of the characteristics of the community of practice which are teachers and school leadership beginning to take their responsibilities with confidence (Chapter Five: Section, 5.2.2.1 and Section, 5.2.2.2). The focus shifted from individuals and small groups to a collective effort that deepens their knowledge and expertise on an ongoing basis to address any emerging challenges in teachers' endeavours of adapting their teacher-centric pedagogies to those of the 21st century learning (Zhang, Tian, Yuan, & Tao, 2022). That said, the creation of learning spaces as the core of establishment of community of practice that will in turn be an effective instrument to address other challenges that exist in schools in a given context and time.

### 7.3.5 Learning spaces conception and practice as a "group think" matter

Learning spaces require innovative ideas emerging from group thinking with different people who have the ability to think creatively. According to Plotnikov and Volkova (2019), group think is a psychological feature of a set of individuals who are doing creative thinking and a strong desire for solidarity. On one hand, group think is a function of community of practice that is capable of making objective decisions easier for professional development and competences of other followers (Ivshin & Yurkov, 2020). On the other hand, creative thinking can be defined simply as the ability of an individual or group of people to produce work that is original and appropriate to the task (Sternberg & Lubart, 1999). Group interactions and continuing engagements to a larger extent, encourages risk-taking (Janis, 1982) which is mainly the core of what makes the creation of learning spaces and the teachers adapting to the 21st century behavioural practices to thrive. Central to "group think" is the continuing interactive process of brainstorming and discussing favourable conditions for creativity, innovations and insight to approaches of creating learning spaces with success (Soboleva, Surorova, Grinshkun & Nimatulaev, 2021).

In essence, this thesis has brought to the fore an understanding that for organisations such as schools, a 'group think' takes into consideration the aspirations of different people; hence, that group creative thinking is inherent in every person (Sánchez-Barbero, Chamoso, Vicente & Rosales, 2020). The advantages of group thinking among many, is that it allows the simplification of complex problems that are foreseen for their easier resolution (Putra & Ali, 2022). Individuals are enabled to gain more information from other group members that empower them to accomplish a shared goal (Olsen & Tylén, 2022). Evidence to this knowledge sharing takes place during staff meetings and with social media platforms (Chapter Five: Section, 5.2.2.1; Section, 5.2.2.2 and Section, 5.2.2.4). School leadership then took an advantage of these developments and tap on them by making strides of providing the community of practice with resources and professional developments (Mr Makhoba, the Principal of Themba Secondary School; Miss Hlela, the Principal of Sizwe Secondary School). In the main, positive steps that are taken by school leadership enhance teachers to do more than they possible can for schools to be under the current social and economic demands of the 21st century. Seemingly, school leadership behavioural practice is an arousal of team spirit for each individual to do more than possible can for achieving the set objectives.

Group thinking gives an effect to group interactions and critical thinking with threaded discussions about their behavioural change (Alharbi, Elfeky & Ahmed, 2022). In this case, expected behaviours include those that add value to learning spaces as a new phenomenon. For group thinking to be effective, continuous interactions are an important factor that all members embrace and encourage each other with ease. The encouragement and energising effect for group thinking continuity is the function of school leadership (see Chapter Five: Section, 5.2.2.1 and Section, 5.2.2.2). Group interactions involve mostly convergent and divergent viewpoints that enhance more discussions and critical thinking (Olsen & Tylén, 2022). Since this is the case, the continuity of group discussions narrows and fills the gap of behaviours that add value to group thinking through casting new vision and motivate others towards transformation (Russell & Stone, 2002). At some point, it becomes known that the continuing group interactions indicate an emerging correlation between individual thinking and group thinking relative to a better understanding of dynamics for creativity and innovations regarding the learning space.

Group thinking is characterised by multidimensional sequence of behaviours from open rather than controlled participation with distinct influences regarding learning space from the participants (Budd, Johnstone & Lamare, 2022). The multidimensional sequence of behaviours

and their influence on group thinking have implications for multiple routes toward flexibility and persistence in pursuing creativity and innovations of learning spaces. Implicit to group interactions, the roots of collaboration, collegiality and cooperation emerge (Soboleva, Suvorova, Grinshkun & Nimatulaev, 2021). These developments create a space that enables people to work together in addressing challenges that may emerge going into the future. Knowing that collaboration does not occur naturally, group thinking subtly addresses the constraints that may stifle collaborative processes and information sharing practices for successful creativity and innovations of the learning space (Abdullah, Soh, Mokhtar, Hamzah, Ashari & Rahman, 2021).

### 7.3.6 Learning spaces concept as a gateway to creating the developed economies

Learning spaces concept is an important framework that provides learners with opportunities for developing 21st century skills. In view of the type of specific skills that include, but not limited to collaboration, communication, creativity and critical thinking skills, learning spaces concept has become a gateway for learners to participate meaningfully in global economies (Van Laar, van Deursen, Van Dijk & De Haan, 2020). Such opportunities for the learners to develop these skills may have deprived them of new opportunities had the education systems continued with outdated traditional classrooms. Considering the fact that knowledge economy of the 21st century requires skill development that constitutes the backbone for economic emancipation of global citizenry, the notion of learning spaces is becoming a gateway from the 18th century industrialism to a global socio-economic landscape that has made drastic changes of the fourth industrial revolution (Renjen, 2019). More often than not, such economic emancipation of economically developing and developed countries has made them realise that learning spaces concept is central for education systems that cater for different needs for a global society in this era of the 21st century (Bruwer & Smith, 2018).

The creation of different types of learning spaces has caused education in the global dispensation to undergo significant transformation to be relevant in the 21st century knowledge intensive global economy (McKenna, 2013; Van Zyl, Venter & Bruwer, 2021). Transformation has brought to fruition a paradigm shift that includes changes from teaching to facilitation, passive to active learning and individualistic to collaborative development to mention but a few (Chen, 2010). The main objective of transformation is the shift from the industrial economy to support the current 21st century knowledge economy (Benade, 2021). Learning spaces is apparently, a vehicle to move education as a system and all the tools that make it effective to a state that it has become relevant

to the 21st century knowledge economy (Marouli, 2021). The success of this endeavour has been made possible by school leadership encouraging, motivating and supporting teachers to be innovative when creating learning spaces and concurrently adapting to the 21st century pedagogies. In this regard, the general expectation is that governments define a framework for learners to develop competencies such as soft skills that include learning skills, literacy and life skills (Niemi, Nevgi & Aksit, 2016). As such, these soft skills and core skills prepare learners for the world of work, compete with others and become productive.

Learning spaces concept is apparently, a gateway for the emerging new crop of citizenry that is self-reliant in terms of creativity and innovative skills that are developed during the learning process. The citizenry that may emerged from the purposefully the created learning spaces and pedagogies imbued with skills development believe in themselves and enter into unchartered territories in economic terms to explore more (Khan, Abbas, Godil, Sharif, Ahmed & Anser, 2021). The learning process may enable learners to expand their thinking capacity (Mr Zulu, a teacher at Themba Secondary School) and could also enable them to access information everywhere anytime when all the affordances are in place and accessible (Miss Zakwe, a teacher at Sizwe Secondary School). Moreover, if the kind of citizenry that emerges from learning spaces for the 21st century is in the majority, with snowballing effect coming into play, the underdeveloped economies will experience an inclination to emulate the developed economies, and thus, help reduce the economic inactivity of many people globally.

### 7.3.7 Learning spaces: moving from abstractions to emergent conceptions

Learning spaces concept is a global phenomenon with all its embedded multiplicity of meanings from different scholars. Therefore, it does not have any explicitly pre-determined and prescribed route-map to create (Goodyear, 2020). Yet, most developed countries are at the advanced stages of creating learning spaces. In contrast, many developing countries continue with outdated traditional classrooms that were initially designed for teacher-centric pedagogies (Spencer & Temple, 2021). It has to be noted that the reconfigured and redesigned physical layout of classrooms are insufficient for effective learner-centric teaching approaches, but the affordances, their use and a wider pedagogical repertoire are critical (Young & Cleveland, 2022). Moreover, in-depth insights into the impact of contextual variables need to be considered and given the necessary attention in order to avoid unintended consequences of misaligning the transformation agenda with broader contemporary objectives for the 21st century. For this need to be a reality,

school leadership has to shift boundaries by allowing and then support teachers to be more innovative in creating various settings of learning spaces. It is important school leadership to take into cognisance that diverse sets of actors can move abstractions into conceptions through knowledge and activities that are grouped together for a common objective. The overall implications of the attributes of learning spaces is that the creation of learning spaces of any kind is a complex and risky undertaking with no one-size-fit all approach when different contextual factors are at play. After I have done abstractions in this study, it is evident that there have been some additions to the concept of learning spaces in relation to who and how it can be developed. The notion that school leadership is constituted by formally appointed staff has been refuted, and so is the notion of school leadership taking a lead in this regard. Bottom-up leadership is one of the emerging conception of the creators and facilitators of learning spaces for the 21st century learning.

### 7.4 Conclusion

This chapter presented a detailed discussion about abstractions from this thesis. The chapter illuminated both empirical and philosophical issues that are critical for understanding various dimensions relating to learning spaces. The new knowledge that has surfaced is beyond beliefs, knowledge, experiences and existing theoretical frameworks from other findings. In this regard, the abstraction process has broadened the horizon of the existing knowledge.

# CHAPTER EIGHT

# SYNTHESIS, CONCLUSIONS AND RECOMMENDATIONS

## 8.1 Introduction

The previous chapter focused on abstractions of new ideas and concepts emanating from the analysis of data presented and discussed in Chapter Five and Chapter Six. In this chapter, I present and discuss the conclusions of this study. I begin by providing a synthesis of the whole thesis by presenting the synopsis of the content of each chapter. The synthesis of this study is followed by the presentation of the findings from a multiple-case study of Sizwe Secondary School and Themba Secondary School. The focus of this study was on the exploration of school leadership practices in creating learning spaces that best support the 21st century learning for learners in the context of rural complexities. I have decided to use the research questions in presenting the conclusions. I discussing these conclusions I also indicate the extent to which the empirical data has managed to address all the research questions. The research questions are then re-stated before I use them as headings to organise the discussion of the conclusions. Thereafter, I conclude by highlighting the lessons learned, and make recommendations. The conclusion brings the entire thesis to a close.

## 8.2 Synthesis of the whole thesis

This study endeavoured to explore the activities of school leadership when creating learning spaces for the 21st century learning for learners in two rural secondary schools. In this regard, school leadership is made up of school managers, generally referred to as principals as the most senior in this leadership structure. They are an anchor to all the activities undertaken in the school. While this is the case, the activities of school managers were subsumed within the overall activities of school leadership. The assumption I had prior to conducting this study was that school leadership is not an exclusive domain of an incumbent occupying formal leadership positions especially in the context of rural settings. I also understand that there are specific challenges brought to the fore by the environment afflicted by multiple deprivations that school leadership had to grapple with on continuous basis. I then sought to explore school leadership practices that are effective in creating learning spaces that best support the 21st century learning for learners in the context of complex rural settings.

The kind of leadership that facilitates the creation of learning spaces with concurrent teachers adapting to the 21st century pedagogies is consistent with transformational leadership theory. Therefore, that theory of leadership is appropriate for both supporting such efforts and also for understanding and analysing school managers' leadership practices. The assumption that I had was that leadership should be perceived in relation to the context in which schools are located. The reality is that there are rural-context that have peculiar challenges that require adaptive leadership approach to make it more effective. In this regard, the general top-down routine of leadership behaviour is put to test because of the great diversity of contextual factors and their impact on the general leadership practices.

In **Chapter One,** I gave the background in order to provide the foundation for understanding the objectives of this study. The primary objective was to uncover the activities of school leadership in creating learning spaces that best support the 21st century learning for learners in rural settings. I made use of critical or research questions that guided this study with the aim of achieving its objectives. Furthermore, it is in this chapter that I provided the reasons for the choice of measures adopted to ensure trustworthiness of this study, the clarification of key terms, the demarcation of the study, as well as the limitations.

**Chapter Two** is about the review of literature comprising scholarly work at national and international levels. The review span across the divergent understandings of learning spaces at practical, theoretical and philosophical levels to activities involved in creating learning spaces. Furthermore, in this chapter, I discuss the design principles that were considered and the roles played by different stakeholders such the school leadership, teachers and parents in creating learning spaces that best support the 21st century learning. Furthermore, I discuss the emerging challenges encountered when creating learning spaces in the context of rurality, as well as the strategies they used to mitigate the negative effects of the challenges encountered.

In **Chapter Three,** I presented and discussed the two theories that constitute a theoretical framework; these theories are transformational leadership advanced by Bass and Riggio (2006) and instructional leadership model by Hallinger and Murphy (1985). Transformational leadership is more consistent in terms of understanding the ever-evolving dynamics in the education landscape. The result of using transformational leadership behaviours of school leadership enabled me to understand the insights about how the participants raised the level of commitments to

supporting change in teaching approaches that are consistent with the demands of the 21st century. Therefore, this theory would assist me analyse the extent to which school leadership and managers were able to raise the consciousness and commitment of subordinate to the vision and goals of the respective schools. On the same breadth, Instructional Leadership model was deemed necessary as a complementary theoretical construct that explained how quality teaching and learning can be provided through leadership.

**Chapter Four** presented a detailed discussion of the research process that included the research paradigm, the research design, the methodology, sampling techniques, data generation and analysis methods. That said, this is a qualitative research design that adopted case study methodology to frame data generation and other processes, including the analysis and trustworthiness and ethical considerations.

In **Chapter Five,** I presented raw data under the themes that emerged from verbatim transcribed semi-structured interviews and the review of documents. The presented data is related to creativity and innovative ways that ordinary teachers and those in formal leadership positions had undertaken to create learning spaces for the 21st century learning for learners.

**Chapter Six** presented a discussion of the findings from Chapter Five. These findings are guided by the research questions and the literature that was reviewed and discussed in Chapter Two is injected in enhancing the analysis and discussion.

**Chapter Seven** presented the abstractions from the thesis, specifically from the findings and discussions from the previous chapters, namely, Chapter Five and Chapter Six respectively.

### 8.3 Research question re-stated

The research questions that were used to guide the generation of data for this study are re-stated as follows:

- What does school leadership in rural secondary schools understand learning spaces for the 21st century learning for learners to be?
- What does school leadership in rural secondary schools do in creating learning spaces for the 21st century learning for learners?

- What are the challenges encountered by school leadership in rural secondary schools in the creation of learning spaces for the 21st century learning?
- How does school leadership in rural secondary schools address the challenges encountered in the creation of learning spaces for the 21st century learning?

## 8.4 Conclusions and discussion

This section is dedicated to the presentation and discussion of the conclusion reached. These conclusions are drawn from the findings that are discussed in Chapter Five and Chapter Six. I use the research questions to organise the discussion. The research questions made it easier for me to elaborate on the extent to which the research questions have been addressed or not.

### 8.4.1 What does school leadership in rural secondary schools understand learning spaces for the 21st century learning for learners to be?

Chapter One has generated an extensive discussion about various conceptualisations of learning spaces (see Chapter One: Section 1.8.1 of Chapter One) in order to address the nuances at play in the conceptualisation of traditional classrooms. It is critical to ascertain understandings of learning spaces firstly, from school leaders' perspectives as they are perceived as drivers of transformation toward the 21st century learning for learners. I could single out an important phrase 'any space' from their responses which is an indication of partial understanding of the phenomenon. The importance of this phrase reinforces an idea that the 21st century learning is not confined within the four walls of the classroom buildings. This way of understanding reflects the current trends in education fraternity which implies that school leadership will endeavour to lead transformation from traditional classrooms into learning spaces with teachers concurrently, adapting to the relevant pedagogical practices.

I noted disparities among the teachers in each of the two secondary schools. Teachers' responses to the question about what they understood about learning spaces can be divided into three categories. One of the categories expressed unawareness of the new approaches of how classrooms should be reconfigured for the 21st century learning, and also did not understand what the 21st century learning entails (see Chapter Five: Section, 5.2.1). The second category of participants are those who demonstrated basic understanding of what is expected of them do to but were not

willing to be creative and innovative. The last category of participants entailed those who have advanced knowledge of what should be done in order to bridge the gap between rural school located in communities affected by multiple deprivations and those in urban and affluent communities. The last group is the one that embraced and took initiatives and had power to influence school managers to cooperate with them in many respects. To that end, there is an undisputed relationship between what an individual understands the new 21st century learning approaches to be and the expected practicalities. I can conclude that the last group has become the centrepiece for transformation in rural secondary schools as the overall embodiment for this thesis. In other words, I can conclude that, while there were participants who either lacked understanding of learning spaces, and those who were ambivalent, overall, the participants did understand this concept and put it into practice as well.

### 8.4.2 What does school leadership in rural secondary schools do in creating learning spaces for the 21st century learning for learners?

My initial assumption was that the activities undertaken by school managers were informed by their understanding of learning spaces. What emerged from the findings is that, within the same school, school managers were continuing with outdated teacher-centric traditional classroom teaching and learning approaches. In the main, the influences of traditional teacher-centric teaching and learning practices on school managers' behavioural leadership practices from both secondary schools are somewhat inseparable from their understanding of learning spaces. Actions speak louder than words regarding the creation of learning spaces and concurrent pedagogical practices attuned to the school managers' understandings of the phenomenon. With that said, more often than not, teachers had taken initiatives of innovation by adapting their teaching practices to the expected contemporary pedagogies of the 21st century learning (see Chapter Five: Section, 5.2.2.3 and Section 5.2.2.4 of Chapter Five). They were not daunted by the complexities and constraints posed by the contextual realities of rurality. Teachers succeeded in infusing technology in teaching and learning, and that has become a turning point for transformation and enhanced continuation of learners' self-directed learning beyond the schools' contact time. A remarkable observation is that it was ordinary teachers (not in formal management positions) that were at the forefront of initiating transformation in both secondary schools.

It is acknowledged that only a handful of teachers who displayed resilience took the initiatives of organising learners into groups in a classroom setup. The setting up of learning groups in the

classroom setup promoted collaborative learning and communication skills development. The rest continued with their usual standardised traditional row seating arrangements of the learners. The resilience of those handfuls of teachers had resulted in overt and subtle influence that ultimately inspired the rest of the teaching force to follow suit in transforming their traditional classroom practices. The influence was more evident when the majority of the teachers were inspired and energised by what they observed their colleagues achieving from the new pedagogical practices they pursued, and they began to infuse technology in teaching and learning as well (see Chapter Five: Section 5.2.4.1).

The narratives expressed in the paragraph above contributed immensely to the success of creating learning spaces for the 21st century learning for learners in rural settings. This is an indication of an influential capacity of school leadership as they successfully encourage, motivate, empower and support teachers to go an extra mile and go beyond their own self-interest for infusing technology in teaching and learning (see Chapter Five: Section, 5.2.2.2; Section, 5.2.2.2, as well as Section, 5.2.4.4). On the same breadth, school leadership drew from the spirit of few teachers' initiatives to influence the rest of staff members by motivating them and clearly communicate expectations that teachers would want to meet (see Chapter Five: Section 5.2.2.1).

A quite remarkable breach of general school policies that disallow carrying and using cell phones in schools and strictly in classrooms have brought about significant changes in learning climate (see Chapter Five: Section 5.2.2.4). In this regard, Ms Hlela, the Principal at Sizwe Secondary School for example, used her cell phone to give learners instructions when she is not at school during school contact times. However, from the documents reviewed, I did not find a cell phone policy related to controlling its use within premises of both schools taking into cognisance the ripple effect of either learners or teachers misusing cell phones. I made a follow up on this issue by enquiring from Miss Hlela, the Principal of the school about whether or not they did have a cell phone policy. In her response, she indicated that there was no cell phone policy regulating the use of these gadgets within the school premises. She acknowledged the shortcomings and responded by saying that although the school had not experienced any difficulties regarding cell phones usage in the school, however, the school was in the process of developing a variety of school policies.

The traditional classrooms were initially designed with the assumption that learning was largely confined within the four walls of formal classroom spaces. Currently, the use of smartphones by

both the teachers and the learners has enabled adaptive and creative minds to be innovative in ensuring that learning continues even beyond the school premises without face-to-face interactions. Indeed, this study is suggesting that despite schools that are located in communities with multiple deprivations, the minimum affordances such as smartphones and internet connectivity have been opened up to possibilities of an important shift into the 21st century learning spaces. Drawing from the teachers using cell phones in a school which was, apparently, against the general policy, barring their use especially in the classroom environment, I can conclude that if cell phones are used for good purposes with strict control, learners will benefit quite extensively in many respects. In any form of transformation that takes place in schools, transformational leaders are aware of high probabilities of mistakes that the teachers may make especially, in the absence of a developed set of guidelines. In this regard, transformational leadership practices are influenced by the contexts in which they are being exercised. In this case, transformational leaders have not charged teachers on account of misconduct or deliberate use of cell phones in schools. Hence, there are no regulations or policies which spell out the sanctions if one is found carrying and/or using cell phones in the schools or in the classrooms.

Apart from infusing technology in teaching and learning, learners are also provided with opportunities to interact with each other in organised group activities for collaborative and information sharing activities (see Chapter Five: Section 5.2.2.3). This is another approach that seems to be effective in providing learners with opportunities to develop the 21st century learning skills through learner-centric pedagogies. These skills include collaboration, communication, creativity and problem-solving skills to mention. Indeed, these skills are critically important for the 21st century learning for learners for them to participate meaningfully in the current global knowledge economy. Of course, the analysis of the findings showed that despite a powerful emotional attachment to the influence from traditional classrooms, there is however, a positive emotional attachment to learner-centric pedagogies. Drawing from this finding from this thesis, it is evident that indeed, traditional classrooms may be reconfigured for certain learning modalities of the 21st century learning for learners. It is a worthwhile exercise for an overview of design principles from a variety of scholars that can be relevant for the findings of this study regarding the creation of learning spaces that best support the 21st century learning.

Essentially, I acknowledge the perceived efficacy of planning tools emanating from Christoffersen's (2020) thesis regarding the act of creating learning spaces that support 21st century pedagogy and learning, (see Chapter Two: Section 2.3.1.1). While acknowledging that the

research sites used in that study was well-off in terms of resources, the context in which universities are generally situated and the age cohorts in institutions of higher learning may, to a larger extent, make a huge difference in the effectiveness of learning spaces in schools in rural areas. It would be the difficult and challenging practices to impose specific potential set-ups from one overarching, generic documents from one context into another.

The multiple design principles from different scholars of creating learning spaces that support the 21st century learning, provide more generic information, and probably, more user-friendly format. In view of Darcy's (2016) thesis on hybrid learning space design, the findings encompass the iterative development of a learning design process for teachers and the overall nature of behavioural practices of learner and teachers. Notably, the focus is on hybrid learning spaces with a framework characterised by the merging of a physical space and a digital environment, allowing for a real time engagement among the learners. In acknowledging hybrid learning spaces pursued to support learning in formal and informal education settings, that has drawn my attention to explore the design principles from Darcy's (2016) perspective. The significance of this approach reaffirms the findings from semi-structured interviews for my thesis that when affordances are available, traditional classrooms and teaching practices can be adapted to meet the demands of the 21st century learning for learners. However, hybrid learning spaces may, to a large extent, become strenuous to pursue in secondary schools in the case of my study when taking into cognisance complexities emanating from rural settings (see Chapter One: Section 1.8.3, Section 1.8.4 and Section 1.8.5 respectively). With that said, undoubtedly, not all settings of learning spaces as discussed above (see Chapter Two: Section 2.2) may be pursued successfully when taking rural contextual factors into cognisance.

It is expected for any reader to find a relationship between the redesign principles and the reconfigured traditional classrooms that support the 21st century learning. Therefore, it is prudent to ascertain the relationships between learning spaces that has been created from reconfigured traditional classrooms and the design principles already brought to the fore by different scholars. The redesign principles incorporate both an organisational and a technological perspective. Noticeably, the common features of most redesign principles from different scholarly work include flexibility of the learning space, allowing individual and collaborative activities, access to technologies and the continuation of learning beyond the four walls of the classroom. Undoubtedly, any transformation in pursuit has high probability of making mistakes in the process. With regards to innovative ways of creating learning spaces, teachers will not face public

criticism for mistakes they may have been made which is a form of stimulating and inspiring teachers to achieve more than they can imagine (Bass, 2008). Having said that, I should state that change is inevitable (Hallinger, 2003) which inspire school leadership to respond to the changing needs imposed by the context in which it occurs.

### 8.4.3 What are the challenges encountered by school leadership in the creation of learning spaces for the 21st century learning for learners?

The data presented in Chapter Five has provided a detailed discussion about the challenges that school leadership encountered. The issue of the challenges that came up prominently were common across the two schools and they posed a great threat to the creativity and innovations of creating learning spaces of the 21st century learning. These challenges are two-folds. On one hand, there were internal-to-school factors that discouraged teachers from transforming classrooms into learning spaces for the 21st century learning. These factors included scarce technology-based resources and no-change attitude of the teachers towards issues of transformation (see Chapter Five: Section, 5.2.3.4). I refer to these factors as internal-to-schools because the data that I generated from semi-structured interviews and the analysis of documents have shown that school leadership made successful interventions to address these challenges. On the other hand, I have factors that I refer to as external-to-school in view of the fact that school leadership have no full control on them. These factors include burglaries, theft and vandalism, unreliable supply of electricity, financial constraints and non-parental involvement to school affairs (see Chapter Five: Section, 5.2.3.4).

It is evident in this study that both the internal and the external factors seemed to be the source among others for the teachers to change and continue with their traditional practices to which they are accustomed. It becomes even more challenging for school leadership to influence, motivate and inspire teachers to strive towards the main objectives of the 21st century learning. Nonetheless, with the existing climate of collaboration, cooperation and shared values instilled by school leadership behaviours, they have propelled school leadership and teachers in general from secondary schools to demonstrate resilience.

### 8.4.4 How does school leadership in rural secondary schools addresses the challenges encountered in the creation of learning spaces for the 21st century learning?

The sustainability and success of school leadership in addressing the challenges encountered were strongly linked to their commitment to transform their schools into learning spaces for the 21st century learning for learners. The evidence in this study shows that school leadership's tendencies had powerful influence on the rest of staff members that were initially resistant to change and had negative attitudes towards adapting their pedagogical practices to those of the 21st century. Indeed. extrinsic motivation from school leadership, the influence is contingent upon the degree of teamwork ethos and personality heterogeneity of individuals within school settings (Russell, Kohe, Evans & Brooker, 2022). A landmark is made in schools regarding the built homogeneity playing out in school leadership when supporting each other and teacher to address other challenges or find the alternatives in their endeavours to achieve their shared objectives.

The alternative measures to learner-centric pedagogical practices were manifesting when there were unannounced electricity and prolonged power outages. In this regard, it became an established practice in both schools to switch back to teacher-centric pedagogies when such unfortunate incidents occurred whilst interactions between the teachers and the learners were in progress. This kind of response to such unfortunate circumstances served as an indication of the enhancement of the quality of instructional processes by school managers. This practice is perceived to be the result of school managers that had successfully implemented strategies meant to minimise interruptions and to maximise instructional time and in order to enhance learner achievement. Overall, this is one of the leadership practices among others for school managers to protect instructional time as indicated by Hallinger and Murphy (1985).

The conclusion that can be made here is that school leadership has successfully established sustainable learning climate through the provision of technology-based resources. Notwithstanding the financial constraints as a result shrinking allocations from the Department of Basic Education, school managers in both schools went out of their way to seek sponsorships from external service providers. Knowing that the two secondary schools fall under the category of 'No-fee' schools, the intrinsically motivated school managers to go beyond their call of duty to ensure that effective teaching and learning was supported. These school managers were perceived to be an inspiration from ordinary teachers' collegiality, cooperativeness and also consultative in their professional responsibilities (Daniels & McCarthy, 2022). In essence, collegiality refers to

enhanced levels of collaboration between teachers and school leadership. It is characterised by mutual respect, cooperation and shared professional values about the 21st century pedagogical practices (Omar, Khuan, Kamaruzaman, Marinah & Jamal, 2011). Indeed, this is what made the two secondary schools in this study thrive in creating learning spaces and adapt to new pedagogical practices of the 21st century despite the rural contextual factors at play in this regard.

An overview of the findings in Chapter Five, emerging themes in Chapter Six, abstractions from the thesis in Chapter Seven and the synthesis in the current Chapter Eight have all made a distinctive feature of emerging model of leadership that culminated into positive outcomes. It emerged from this journey undertaken, about the emphasis that school leadership is not necessarily the exclusive domain of school managers or the school principal in particular. Precisely, school leadership is about any individual's leadership qualities in display and in practice in a school setting that matters the most. The graphic below (Figure 5), provides a summary of the interrelationship between the critical concepts such as learning spaces, formal and informal teaching and learning settings, as well as leadership approaches that support teaching and learning for the 21st century learning. Further elaboration on this figure is done below the graphic itself.

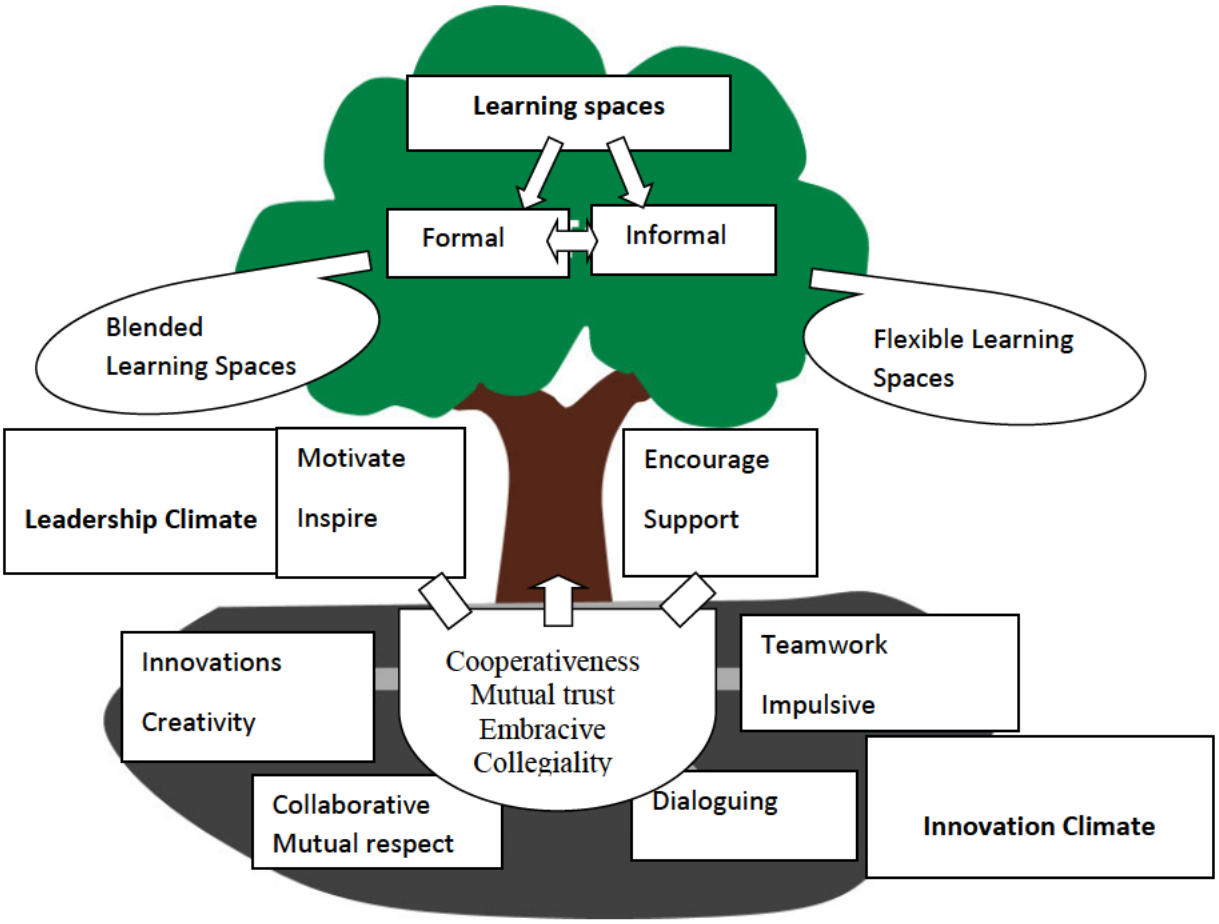


**Figure 5: Emerging model of school leadership for creating learning spaces of the 21st century learning in multiple deprived contexts**

In this emerging model, the innovation climate is at the bottom, below ground level of this model and is the cornerstone that provides an enabling environment for the creation of learning spaces to begin. The individuals are intrinsically motivated to share their innovative ideas with others as the innovation climates provide more opportunities to communicate, collaborate, and conduct open dialogues among their colleagues. Since this is the case, behavioural engagements among the teachers promote the exposure of more teachers to emerging and diverse opinions that give rise to common understandings that are positively related to innovation. Following this kind of teacher behavioural practices as indicated by Gong, Kim and Liu (2020) and Lu and Campbell (2020), teachers put efforts and persist in their innovations and creativity geared towards transformation. Notably, all these initiatives are informally undertaken and are not directly influenced by school managers.

The initiatives from the teachers for innovations and creativity become effective because of an innovation climate created by school managers with the entire school leadership that promoted collaboration and innovation. Sensibly, it is the high level of existing positive interactional effects (Shalley, Gilson & Blum, 2000) in schools that influence innovations and creativity by teachers. Positive interactional effects that lay the foundation for innovation and creativity by teachers are amplified by a stronger and the positive relationship between the interpersonal and school learning practices. Thus, teachers at individual levels attempt their creativities having an understanding that school leadership value their work and their feelings that their approaches of adapting to the 21st century professional conduct are meaningful. From the above understanding of factors that characterise positive innovation climate in schools, individuals are inspired by their past experiences to take initiatives for transformation. The major source of positive innovation climates is their knowledge of the contemporary means of communications and an ease on accessing sources of information and new knowledge by using their competencies in the field of advanced information and communication technology (ICT). Teachers develop new competencies at the pace at which the rapid development of ICT is taking place. Of course, the popularisation and the advantages of using advanced technologies as, well as teacher competencies in ICT are other sources of inspiration of teachers infusing technology in teaching and learning**.**

The leadership climate is above ground level that shows leadership activities for creating learning spaces. It emerges from this thesis that initially, it is individuals that took initiatives by taking a risk to change the *status quo* regarding the outdated traditional teaching and learning practices. Indeed, these initiatives of innovations and creativity were influential to teachers when using traditional classrooms as learning spaces that support their contemporary approaches to teaching and learning of the 21st century. It is worthwhile to be mindful that school managers were not in the forefront in taking initiatives, but as responses to the needs of the teachers in propelling innovations and creativity that informed transformation. Since the kind of transformation that ultimately proliferated to the whole school was initially from the individuals' risks taking, school managers began giving value to activities at that level.

It was evident from the kind of engagements between individual teachers and school managers that leadership currently seems to be not overly hierarchical or bureaucratic as it is always the case. The evidence to this effect is when school managers typically, counted on ordinary key teachers with strong influence for transformation, not only verbally, but also exercised through initiatives of innovations and creativity that they had already taken. In this instance, the high

regard of the degree of engagements between school managers and individuals permeated all staff members (see Chapter Five: Section, 5.2.4.1). In this regard, more energised and highly motivated teachers began to take leadership responsibilities of support and empowerment to other teachers (see Chapter Five: Section, 5.2.4.1). To this effect, the first point of intervention by school leadership is that of providing support to individuals with specific needs such as the required resources for each subject of specialisation. Hence each subject at secondary level has its own unique needs that at most may not necessary be the same across other subjects.

This kind of school leaderships' behavioural practices is perceived to be of collegial engagements with teachers that is enhanced by mutual trust and respect among themselves. Surfacing to a greater degree from these collegial engagements is the notion of cooperative and collaborative leadership at play. Importantly, school leadership assist teachers with challenges as they embark on taking risks of innovations and creativity when the context of rurality is at play. At some point, the continuing support given to certain individuals that are at the forefront for transformation increases their levels of commitment that culminates into the realisation of aspired pedagogical practices for the 21st century learning. Although transformation is at its infancy, that began on teachers' terms, driven by needs and wants, it gave school leadership impulses to stimulate other teachers through dialogue consultative approach to be innovative in their profession. Notably, the level of trust, mutual persuasion and deeply human relationships among teachers and between teachers and school leadership became the enablers for teachers to be innovative and creative on their own accord. It is at this stage that ordinary teachers not in formal leadership positions, who are in the forefront of transformation and technology literate, are also stimulating their colleagues to embrace envisaged new approaches to their profession. The stimulating effect towards other teachers by both school leadership and teachers at the forefront of transformation culminates in successful teamwork efforts. According to Scarnati (2001), teamwork is a cooperative process that allows individuals to achieve more results than they possible can.

Meanwhile, school leadership encourages other teachers that are adamantly conservative, to try new approaches of teaching and learning. There is however, a concurrent arousal of interest to do the same, and change their ways of teaching. In this regard, school leadership inspires and motivates all teachers to discontinue with traditional teacher-centric practices and the use of traditional classrooms in which they are accustomed. On the same breadth, school managers can get the support of other teachers that are already well acquainted and informed about innovative ways of doing things differently to inspire others to follow in their footsteps. If this is the case,

therefore, school leadership embodies both school managers in formal positions and ordinary teachers that are exercising core leadership responsibilities. Ultimately, in the context of rurality, flexible and blended learning spaces are probably the most import different settings of learning spaces among others that may be created with success.

### 8.5 The lessons learned from school leadership practices and strategies employed to create learning spaces that best support the 21st century learning for learners

This study has provided insights about and the untapped potential of individuals or groups of teachers that are not in any formal leadership position thriving for transformation. It emerged from this thesis, that the subordinates' initiatives towards transformation are perceived to be an impetus to school leadership to begin taking their responsibilities of ensuring that schools are transformed into the 21st century educational landscape. The groups of dedicated teachers seemingly do not, by and large, follow any statutory prescripts to effect long anticipated transformation successfully because both participating rural secondary schools do not have them. Therefore, this study breaks new ground by presenting various impulses to school managers occupying formal positions to take their responsibilities in a stimuli-response mode when they are perceived to be lacking the know-how of transforming the overall environments of their schools.

I, unequivocally, submit that such individuals or groups of teachers seemed not to be informed by theory or any other model in what they do best; but they sought to prioritise and adequately respond to school managers' desires to have their needs addressed, and wanted to be important role-players in the transformation process. Evidence to this effect is what emerged from this thesis where ordinary teachers took initiatives of transforming their traditional classrooms set-up and pedagogical practices to the expectations of the current era of the 21st century (see Chapter Five: Section, 5.2.2.3 and Section, 5.2.2.4). In this regard, ordinary teachers became critical and determined to not to be daunted by the inability of school leadership occupying formal leadership position to take their leadership responsibilities and bring about the much-anticipated transformation and to lead by example.

### 8.9 Conclusions

This chapter reflected on the presentation and discussions of findings of the study based on the analysis presented in the previous three chapters. Reaching this milestone has not been an easy

journey. I began this chapter by providing a synthesis of this study before I presented and discussed the findings. The process of generating data from the participants involved establishing rapport with the main participants that included school principals, deputy-principals and departmental heads and teachers from two rural secondary schools. Based on the findings, this study concludes that educational transformations in areas with multiple deprivations may be highly possible when teachers are given opportunities contribute immensely to the vision and mission of the school in pursuit. This approach seems to expedite a transformation agenda of the 21st century when advanced and the continuing digital technologies have transformed the ways how people learn. Notably, a bottom-up approach where leadership is reliant on mutual respect and trust with teachers in transforming schools is probably more effective than a top-down imposition of policies and regulations thereto.

Another conclusion to be made is the fact that for change to happen, leadership is not critical, but that it can be exercised from anywhere and everywhere. In the context of this study, I can conclude that the notion of school leadership as the sole prerogative of those people with formal positions such as principals, deputy principals and departmental heads is unsustainable at worst, and highly contested at best. In fact, this study has metaphorically, thrown it out of the window. We have seen how ordinary teachers in the classrooms have driven transformation processes in the two schools and gained a buy-in from the members of the School Management Teams. Collaboration has proved once again to be a game changer that can facilitate sustainable transformation process at school level.

## 8.10 Recommendations

The recommendations for this study have implications for rural school principals, implications for further research and theory development. It should be noted that these recommendations are not directed at stakeholders that did not participate in this study. In addition, and in keeping with the design and paradigmatic position of this study, I am not by any means implying any generalisation from the conclusions and recommendations made.

### 8.10.1 Implications for rural school principals

This study has shown that some rural school principals can be encouraged to change their mindset and then influence other stakeholders in the same context to use whatever they have to make a

paradigm shift for a transformation agenda. These principals may adopt a multi-disciplinary leadership practices of collaborating and cooperating with staff members in order to tap on their expertise to make their schools to remain relevant to the current socio-economic imperatives. School principals may rely and use the findings ofr this study as their benchmark to leverage their mission and improve their visions and road maps for school reforms. As much as the participants have done wonderful job in bringing about transformation, it is recommended that they need to further explore and strengthen their consultation skills to include traditional leaders in their communities. Previous studies that were conducted in rural communities such as these, have shown tangible benefits of engaging with traditional leadership structures, particularly, in addressing social ills like burglary and theft of school property.

### 8.10.2 Implications for further research and theory development

This research study is playing a critical role in bring to bear the importance of minimising the gaps that exist and that undermine the quality of education that is provided in rural schools. This is a qualitative inquiry, and as such, it has very limited application. However, the issues that have emerged from the analysis, and its contribution to the new ways of understanding the application of learning spaces in rural areas, requires further exploration. Therefore, there are many varied dimensions that further research can explore.

## 8.11 Conclusion

This section brings the whole study to a close. In so doing, there are numerous items that this study has uncovered and that need to be highlighted as a way of concluding the study. I must hasten to say that many of these issues I am referring to above, have already been discussed in this chapter and the one preceding it. One of them is the fact that the conceptualisation of learning spaces has been enhanced by bringing a rural dimension of rurality from the perspective of a developing country in the African continent. Secondly, this study has clearly shown that school leadership can be reconceptualised to include everybody in the school beyond those who occupy formal positions. Additionally, the theory of transformational leadership has always been viewed from the perspectives of those in formal positions. Such a notion and practice has been dispelled in this study. In short, this study has made an original contribution in the field of educational leadership and management in terms of all the items I have mentioned here-above.

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## Appendix A

**Permission letter to KZN Department of Education**

[redacted]

Phase 3

Inanda

4309

04 January 2021

Attention: The Head of Department (Dr E. Nzama)

Department of basic Education

Province of KwaZulu-Natal

Private Bag X9137

Pietermaritzburg

3201

Dear Sir

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH**

My name is Dumisani Brian Zondo, a Doctor of Philosophy of Education in the School of Education at the University of KwaZulu-Natal (Edgewood Campus) specializing specialising in the discipline of Education Leadership Management and Policy. As part of my studies I am expected to conduct research in schools. I therefore humbly seek permission to conduct research in two secondary school located in Ndwedwe area which are under your jurisdiction. The title of my research study is: **Creating learning spaces for the 21st century learning in rural secondary schools: a case study.**

The aim and purpose of this research is to explore how rural secondary schools can create learning spaces for the 21st century learning while taking into cognisance the impact of rural contextual factors. The non-random purposively identified participants will be Principals, Deputy-Principals (DPs) and Departmental Heads (DHs) of two secondary schools that I would like to conduct semi-structured interviews and documents review to generate data.

The interviews will not be conducted in such a way that they interfere with daily activities of the school and they will be at the time convenient to participants, which will be after school hours. I will communicate with each participant well in advance to prepare for the time and venue

convenient to him/her for interviews. The approximate time for interviews will be 30-40 minutes and will be audio-recorded.

The information that will be provided by SMT members and teachers will be treated with confidentiality and pseudonyms will be used to protect the identity of the school and participants. A consent form to participants categorically states that their participation in this study is voluntary and they may withdraw at any stage without incurring any penalties.

For further information, please you are welcomed to contact me using the following contact details: [redacted] e-mail address: zondo.dumi1@gmail.com.

My supervisor's details are as follows: Dr Bongani, Nhlanhla, Cyril Kenneth Mkhize, University of KwaZulu-Natal (Edgewood Campus) in the discipline of Education Leadership Management Policy. Tel: 031 260 2639; e-mail address: mkhizeb3@ukzn.ac.za.

Interview questions are attached herewith for your perusal.

Thanking you in advance

Yours Faithfully

Mr D.B. Zondo

[redacted]

## Appendix B

## Permission from Department of Education

KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE HEAD OF DEPARTMENT

Private Bag X9137, PIETERMARITZBURG, 3200
Anton Lembede Building, 247 Burger Street, Pietermaritzburg, 3201
Tel: 033 3921062 / 033-3921051
Email: Phindile.duma@kzndoe.gov.za
Buyi.ntuli@kzndoe.gov.za

**Enquiries:** Phindile Duma/Buyi Ntuli **Ref.**:2/4/8/7071

Mr Dumisani Brian Zondo
Lot 945 Inanda Glebe
Phase 3
**INANDA**
4309

Dear Mr Zondo

**PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS**

Your application to conduct research entitled: "**CREATING LEARNING SPACES FOR THE 21ST CENTURY LEARNING. A CASE STUDY FOR SCHOOL MANAGEMENT TEAMS IN RURAL SECONDARY SCHOOLS**: in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 27 January 2021 to 10TH October 2023.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma/Mrs Buyi Ntuli at the contact numbers above.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

[redacted]

**Dr. EV Nzama**
**Head of Department: Education**
**Date: 27 January 2021**

GROWING KWAZULU-NATAL TOGETHER

## Appendix C

**Permission letter to school principals**

[redacted]

Phase 3

Inanda

4309

18 January 2021

Attention: The Principal

.....

.....

Dear Sir/Madam

**Permission to conduct research**

My name is Dumisani Brian Zondo, a Doctor of Philosophy (Education) student in the School of Education at the University of KwaZulu-Natal (Edgewood Campus) specializing specialising in the discipline of Education Leadership Management and Policy. As part of my studies I am expected to conduct research in schools. I therefore humbly seek permission to conduct research in your secondary school. The title of my research study is: **Creating learning spaces for the 21st century learning in rural secondary schools: a case study.** The aim of this study is to explore the activities involved in creating learning spaces for the 21st century learning by School Management Team members and teachers in secondary schools in rural setting. The non-random purposively identified participants will be Principals, Deputy-Principals (DPs), Departmental Heads (DHs) and teachers of secondary schools that I would like to conduct semi-structured interviews and to do documents review in order to generate data.

The interviews will not be conducted in such a way that they interfere with daily activities of the school and they will be at the time convenient to participants or after school hours. I will communicate with each participant well in advance to prepare for the time and venue convenient to him/her for interviews. The approximate time for interviews will be 30-40 minutes and will be audio-recorded.

Please take a note of the following aspects that shall be observed to the fullest:

- Participation in this study is voluntary and they may withdraw at any stage without incurring any penalties.
- There will be no financial benefits that may be accrued as a result of participating in this research project.
- Pseudonyms will be used to represent the name of your school and names of individuals in order to protect their identities.
- All the responses will be treated with strict confidentiality.
- The interviews shall be voice-recorded to assist in verbatim transcriptions of interviews.

For further information, please you are welcomed to contact me using the following contact details: [redacted] e-mail address: zondo.dumi1@gmail.com.
My supervisor's details are as follows: Dr Bongani, Nhlanhla, Cyril Kenneth Mkhize, University of KwaZulu-Natal (Edgewood Campus) in the discipline of Education Leadership Management Policy. Tel: 031 260 2639; e-mail address: mkhizeb3@ukzn.ac.za

Thanking you in advance

Yours Faithfully

Mr D.B. Zondo

**Appendix D:**

**Consent letter to participants**

945 Inanda Glebe

Phase 3

Inanda

4309

28 June 2021

Dear Participant

My name is Mr Dumisani Brian Zondo. I am a PhD candidate studying at the School of Education under Education Leadership Management and Policy (ELMP) discipline in the University of KwaZulu-Natal, Edgewood Campus, South Africa.

You are being invited to consider participating in a study that involves research entitled: **"Creating learning spaces for the 21st century learning in rural secondary schools: a case study"**. The aim and purpose of this research is to explore how rural secondary schools can create learning spaces for the 21st century learning while taking into cognisance the impact of rural contextual factors. The study is expected to enrol ten participants from your school. Participants will include the School Management Team (SMT) members and teachers. The duration of your participation if you choose to enrol and remain in the study is expected to be 30 – 45 minutes during the interview session. This interview session may be followed by another in order to seek more clarity or confirm your responses from the previous interview. This may occur within a period of a month and there are no potential risks perceived when you participate in this study. In the event of any problems or concerns/questions, you may contact the researcher at:

Email address: 279ondo.dumi1@gmail.com

[redacted]

[redacted]

Or

Supervisor: Dr B.N.C.K. Mkhize who is located at the School of Education, Edgewood Campus of the University of KwaZulu-Natal.

Contact details:

Email address: mkhizeb3@ukzn.ac.za

Telephone number: 031 260 2639

Co-supervisor: Dr S.D. Bayeni who is also located at the School of Education, Edgewood Campus of the University of KwaZulu-Natal.

Contact details:

Email address: bayenis@ukzn.ac.za

Telephone number: 031 260 7026

Or

UKZN Humanities & Social Sciences Research Ethics Committee.

Contact details:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: +27 31 2604557. Fax: +27 31 2604609

Email address: HSSREC@ukzn.ac.za

Please note that:

- your confidentiality is guaranteed as the information you have provided will not be attributed to you in person, but will be reported only as a population member opinion.
- pseudonyms will be used to protect your identity and that of your school throughout the study.
- the interview may last for about 30-45 minutes and there may be a follow-up after completing transcripts to seek more clarity or to confirm your responses.
- any information provided by you cannot in any way be used against you but it will be for the purpose of this study only.
- data will be stored in secure storage all the time when not in used to protect your confidentiality and that of your school. When I have completed the study, I will then submit data to my supervisors for safe storage in the institution and then to be destroyed after five years.
- you have a choice to participate, not to participate or withdraw your participation in this study at any stage. Kindly use any form of media platform convenient to you to

communicate your withdrawal without necessarily giving reasons to that effect. You will not be penalised for taking such a decision.

- your involvement in this study is purely for academic purposes and there are no financial benefits involved.
- if an injury occurs to you a s result of this study, a medical treatment is always on stand-by.
- the interview will commence only after this study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee.

Thank you for your contribution to this study

_____

Mr D.B. Zondo

## Appendix E

**DECLARATION**

I…… (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project entitled: **Creating learning spaces for the 21st century learning in rural secondary schools: A case study.** I therefore consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

I hereby grant consent to Mr D.B. Zondo to audio-record our engagements as per data generation methods.

**SIGNATURE OF PARTICIPANT** **DATE**

**……** **……**

## Appendix F

**Research instruments**

The title of the study: **Creating learning spaces for the 21st century learning in rural secondary schools: a case study.**

**Biographic questions**.

1. What position do you hold in this school?
2. How long have you been in this position in this school?
3. What is your overall teaching experience?
4. Within which age group do you belong?

| **Category** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
|---|---|---|---|---|---|---|---|---|
| **Age group** | **20-24** | **25-29** | **30-34** | **35-39** | **40-44** | **45-49** | **50-54** | **55-69** |
| **Indicate (X)** | | | | | | | | |

**Interview questions**

1. How do you understanding roles of the (Principal/Deputy Principal/ Departmental Head/Teacher) in creating learning spaces for the 21st century learning for learners?

2. What are you actually doing in creating learning spaces for the 21st century learning for learners?

3. What are the challenges at play as you navigate the creation of learning spaces for the 21st century learning?

4. How do you mitigate challenges that you encounter in creating learning spaces for the 21st century learning?

5. In conclusion: Is there any information you would like to share with me as a researcher relative to the creation of learning spaces that I have not asked but you feel it is very important? Please feel free to share or ask me.

Thank you very much for your contribution to this interview.

## Appendix G

**Document review schedule**

The documents that shall be reviewed are not older than five years. The documents include: (a) Vision and mission of the school. (b) Written or electronic copies of minutes from SMT, SGB, staff and parents' meetings. The focus is on establishing how and what decisions were taken and implemented that ultimately led to the creation of learning spaces for the 21st century learning for learners. (c) The records and inventory lists of resources at hand are an indication of technology equipments the schools presumably are using in contemporary approaches to teaching and learning of the 21st century. These official documents will be used to corroborate and crystallise the interviews thus improving the trustworthiness of the findings of this study. Moreover the documents may reveal the aspects of the information that may have not been addressed during the interviews.

# Appendix H

## Turnitin originality report